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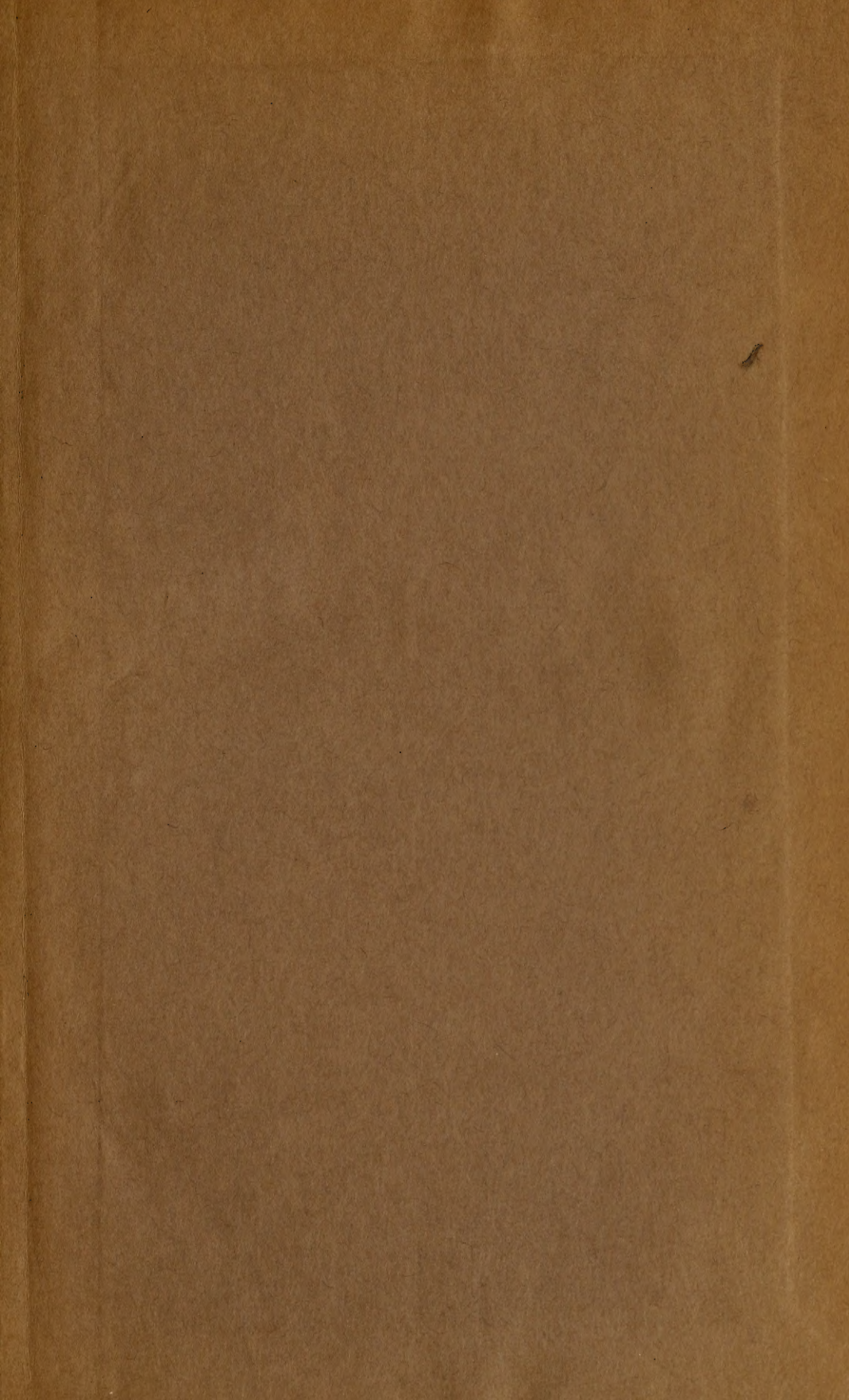
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THE
California Horticulturist
AND
FLORAL MAGAZINE.

VOLUME VIII.—1878.

E. J. HOOPER, EDITOR.



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THE California Horticulturist

AND FLORAL MAGAZINE.

E. J. HOOVER, Editor.

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..... AND

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IS A MONTHLY PUBLICATION,

Devoted to the Cultivation of Trees, Flowers, Fruits and Vegetables,

..... AND TO

Landscape, Ornamental and Market Gardening.

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THE

California Horticulturist

AND FLORAL MAGAZINE.

VOL. VIII.

SAN FRANCISCO, JANUARY, 1878.

No. 1.

LAYING OUT THE GARDEN.

BY CHAS. H. SHINN, AT NILES.

It was quite evident that something must be done. The Crocuses, Jonquils, Oxalis Bower, and Grape Hyacinths were impatiently sprouting in their dark corner of the tank-house. The Japanese Lilies, including *L. amatum*, *L. speciosum album* and *rubra*, *L. nigra*, and others, had arrived, cased in immense balls of clay, and were showing a few white rootlets. The large box of Azaleas, Kalmias, and choice shrubs, and the small box of flower, evergreen, vegetable, and tree seed, were at hand. Besides, there were cuttings and boxes of bedding plants ready to be put out, and little masses of edging—border Pink and dwarf Iris—and there wasn't a decent bed to offer to a respectable plant—and it looked like rain.

Under these circumstances the floricultural portion of our little republic voted for a regularly ordained and duly constituted garden. The eye of faith enabled us to perceive a future glory of bloom on a certain ungainly tract south of the greenhouse, which had been devoted principally to nursery

stock of a monotonous description, and incidentally to volunteer Watermelons, now blackened by the December frosts. Various objections, preferred by interested parties, were successively attacked, and reduced to silence, and the coveted plot of ground was dedicated to the service of the fair goddess Flora.

So the trees were, with due ceremony, removed, and heeled in out of the way; the evergreens were wet and sacked; the Oranges were transplanted; the deciduous shrubs were trimmed, labeled, and moved. After a period of perspiration and tribulation the ground was cleared, and remained a wide waste of clods, and billow-like heights and hollows. This was attacked with that vigor which seizes a person when he feels exactly half way through his undertaking, was reduced to a working level, sprinkled, and left till the next day.

Various fragmentary evenings had been devoted to the preparing of a plan, and, on the following day, this was brought out, and propped in a convenient place, while the master of ceremonies traced it on a large scale in the yielding ground, all faulty curves being amended, until the effect was

satisfactory. Thin redwood siding was next bent and pegged to the curves of each bed; a coating of well rotted manure was thoroughly dug in; and the paths were graveled.

Having in all forty beds, of various sizes and shapes, massing, in the smaller beds, was evidently called for. Six small ovals were devoted to Crocus, Pansy, Blue Lobelia, Portulaca, Nemophila, and Myosotis; four larger beds were planted with Verbena, Sweet William, Ten-Week-Stock, and Ageratum Mexicanum. Some irregular beds took Gladiolus, Lilies, Delphinium formosum, Petunias, Hyacinths, and various annuals. The shrubs were put in the middle of the larger beds; the hardy seed found wee corners; the sprouting bulbs went out of sight. Our garden was an accomplished fact.

One of the delightful beds promises to be that devoted to herbaceous perennials. Only a beginning has been made, but this includes many of the old garden favorites. The Astilbe Japonica, Dicentra spectabilis (Bleeding Heart), Hellebore, Lychnis, Polyanthus, Aquilegias, and Penstemons are all simply invaluable. Nor must the hybrid Antirrhinums and the stately Pæonies be forgotten in this connection.

I find that it will not do to attempt too much in a garden. It is quite impossible to have everything, nor are all the flowers we read about pretty or even endurable. It is so nice to bring out some foreign weed as a great acquisition, that the colored "Novelty Pages" in front of catalogues, though alluring, are not safe guides. But, on the other hand, we do not want to fill our beds entirely with common and well-known flowers, so we must find the golden mean.

Any garden that is worthy of the name must be permanently located.

The sweetest flowers grow best in the same places, year after year. The choicest plants we have are not nomadic. Not until we know that our beds are laid out for years of uninterrupted peace and prosperity, can we venture to indulge in the costlier beauties, which, once planted, must not be disturbed. For a herbaceous perennial or a handsome shrub is like money at interest, constantly increasing in value if left alone sufficiently.

Then, also, a garden ought to be small enough to be kept clean. A weedy garden is an abomination, hated by the gods, and not loved even by foolish men. Only Nature can mix weeds and flowers in one grand display on her free hills, and in her forest glades, and deep, silent ravines; but our leveled and fenced-in places can not endure these wild and uncultured plants. I presume plants are only weeds by reason of their abundance, their habit of taking possession, and their general sauciness, but these are three rather severe charges. It is probable that the stirring of the surface made necessary by the presence of the weeds, will more than counterbalance their evil.

And, lastly, a garden ought to be good to look at, and good to smell of, and good to carry away remembrances of: that is, it must somewhere have the beauty of masses of intense color—Scarlet Verbena, Lobelia, Mountain of Snow Geranium, etc.; it must have sweet corners, and indeed a pleasant breath, and hint of odorous things all over—the love-enchanted Heliotrope, Roses full of song, slender and maidenly Carnations; it must be of that generous and universal nature which furnishes flowers for many occasions—for wedding chimes and for funeral knells, for fairs, surprises, and celebrations.

BULBS FOR SPRING.

There are no spring flowers more highly prized than Snowdrops, Crocuses, Tulips, Hyacinths, Jonquils, etc., whose brilliant flowers delight our eyes as soon as the snow is gone, and the sun's rays awaken them to life and beauty. They are so easily cultivated, and so richly repay the little care they demand, that I desire to call the attention of amateurs to the advertisements of the florists in the columns of the *Country Gentleman*, and beg them, before the ground becomes frozen, to plant at least a few of the many varieties offered in the catalogues of florists and seedsmen.

The beds should be located in a well-drained soil, and if they are so arranged that they are protected by the house or a fence from the northeast winds, they will bloom earlier in the spring. They should be made narrow, so that the bulbs can be cultivated more easily, and they should also be a little raised in the centre, so that the water will not settle and rot the bulbs. The soil should be rich, but not heavy, and it needs a good supply of sand well mixed with it, to make it friable for at least six or eight inches in depth, as the roots of Tulips and Hyacinths often strike down that distance. Sometimes bulbs decay because attention has not been given to preparing the soil, and it was too wet and heavy for their roots to penetrate. Common garden soil mixed with one part sand one part manure, so old that it will crumble in the hand, will make excellent compost for all kinds of bulbs. But if you can procure some old crumbled tan bark from the tan yard—so old that it has no form—and mix one-third of it with garden soil, and add one-third of sand, your bulbs will bloom in perfection.

Never put barnyard manure upon the bulbs until it is entirely decayed, as it would scorch their tender roots.

All bulbs should be planted in November. They must be set firmly into the soil. Take a good sized stick and drill holes with it, and sprinkle a very little sand into each hole, so as to give the roots a good start in light soil. After the bulbs are planted, the beds should be covered with leaves or coarse stable litter; for although they are perfectly hardy in northern New England yet the freezing and thawing of the ground in early spring, and in a warm winter, cracks the ground and injures the roots. When the leaves first thrust themselves through the ground, the covering should be partly removed to give them more air; and when they are three or four inches high, it can be raked off entirely. The Snowdrop will flourish in any soil, and its little bells will shoot up even from the green turf at your door steps. It shows to best advantage when planted in groups of a dozen or more, and as the bulbs increase rapidly by offshoots, it is a good plan to place them about two inches apart, and at least two inches under the soil. Then they need not be transplanted for three years or even a longer period.

The many colored Crocus blossoms next, and its brilliant flowers are always welcomed with pleasure. The smallest child of the household will run eagerly to tell you that King William, or some other far-famed magnate, has shown his gaily striped petals—for florists, from some strange fancy, seem to delight in calling these pretty flowers by high-sounding names, which seem utterly incongruous to their nature. Crocuses should be planted about two and a half inches apart, and at the same depth. They will also grow in

the turf; or they can be planted among the perennials, or Roses, in groups of contrasting colors. Hyacinths are more highly prized than any other bulbs on account of their delicious fragrance and their delicate hues in every color of the rainbow, which add so much to the adornment of the garden. The catalogues offer nearly 200 varieties, and the amateur is so greatly puzzled in making a selection, that the best way seems to be to leave it to the florist to send you those he esteems the best varieties.

In house culture, the single varieties are the most desirable; but for beds in the garden the double species will make the finest appearance. The bulbs should be planted, if of good size, four inches in depth, and four or five inches apart, in well-drained soil, at any time before the ground freezes, and well covered with leaves. For house culture, there are various ways of planting them. Hyacinth glasses can now be procured very cheaply, and the bulbs can be grown in them with water, to which a little charcoal can be added to keep it sweet, and they can be placed on a shelf until they are well started. But of late years a new plan has been adopted with great success. The glasses are filled up with a mixture of thoroughly decayed manure and leaf mold, to which a little sand is added. On top of the glass, where the bulb rests, a little sandy soil can be added, and the bulb surrounded by it. The soil must be kept a little moist, by letting a few drops of water drip upon it occasionally. Bulbs thus planted grow much more vigorously than in water, and send up the flower-shoots to greater advantage above the leaves. If manure is not procurable, Cocoanut fibre can be procured at the florist's, and it will do very well as a substitute. They

can also be grown in sand, which must be kept a little dampened, but not too moist.

Coarse, thick sponges, such as are used to wash horses, are also excellent to grow Hyacinths. Take a very large one and soak it thoroughly in hot water, and if it is boiled awhile it will be cleaned better. Cut large holes into it and insert the bulbs into the sponge a little way, but not so far as to entirely cover their crowns. Attach cords or wires to the sponge to suspend it; scatter canary seeds or some fine grass seeds over its surface, and soon a thick green growth will cover it, and in two or three months it will be a general attraction. The sponge needs to be kept slightly dampened, but not enough to let the water drip from it. Ten or a dozen Hyacinths will often bloom in one large sponge. They should be planted so they will grow from the top, and a little way down the sides.

Tulips must not be forgotten in making a selection of bulbs for spring, as they have been favorites for centuries, and great sums of money have been expended upon them, while the florists have also devoted much time to their culture. The earliest species are the Dwarf Tulip, or the Duc Van Thols, which uplift their brilliant chalices to the sunlight as soon as the Crocus has ceased to bloom. They make beautiful borderings to beds of perennials, and are very ornamental if planted in clumps upon the lawn. The late Tulips and the Parrot Tulips have greater varieties than the early species, and the last named are the most curious of all. Their petals are perfectly striped and feathered, and their edges are fringed like fretted lace work. If they are planted around dwarf Pines, they make a fine appearance against the dark green background. Duc Van Thol Tulips

should be planted about two inches in depth; the other varieties from two to three inches, according to their size, and at the same distance apart. They need not be taken up oftener than once in three years, but if the beds are seeded for other plants, they can be taken up as soon as the leaves turn yellow, and can be kept in paper bags until November.

The creamy, crimson-tinted Jonquils, or poet's Narcissus, are very attractive flowers, as they will bloom in the house as easily as the Hyacinth. For outdoor flowering, they should be planted in clumps or circles about two inches in depth, and at a distance of three inches apart. The buff and white Dafodils, in which our grandmothers took delight, need only to be planted to grow and bloom plentifully.

FRUITS FOR A FAMILY ORCHARD.

We copy the following excellent article from that capital practical monthly paper, the *California Agriculturist and Artisan*:

In this list we have been assisted by some of the best orchardists in the State, and rely chiefly on the suggestions of Mr. G. W. Tarleton, of San Jose, than whom there is not a more careful, thorough, or better orchardist in California. His word is authority upon this subject. The number and proportion that we give is for a common family orchard. Persons planting trees for market should of course be governed by a different rule.

Apples, Early—Three Red Astrachan; 2 Red June; 2 White Astrachan; 2 Golden Pippin; 3 Skinner's Seedling, or Maiden's Blush; 1 Gravenstein; 1 Early Sweet Bow, for baking. The Golden Pippin is a very tart and high flavored Apple, making it desirable for cooking and drying. It does

not dry white as some; not so fine for market as for home use. The Gravenstein falls from the tree badly before ripening, but is fine for eating. Skinner's Seedling hangs well to the tree, is an extra eating and cooking Apple, and good for drying.

Early Winter Apples—Six Yellow Bellflower; 2 Jonathan; 1 Smith's Cider.

The Apples that dry white, and are in demand by the Alden factories for dessication, are Skinner's Seedling, Gravenstein, Smith's Cider, Fall Pippin, Wine Sap, and last, but not least, the Yellow Bellflower.

Late Keeping Apples—10 Yellow Newtown Pippins; 3 White Winter Pearmain; 1 Nickerjack, and 1 late Talman's Sweet.

This makes 38 Apple trees, all extra good kinds for California. There are other sorts, favorites with some. Of course we advise each person to have a tree of his favorite in addition to this list.

For a family orchard the varieties we have mentioned are very choice, and succeed each other admirably in the very order in which we have given them.

Pears, Early and Late, as they come in succession—Two Dearborn Seedlings; 1 Madeleine; 2 Buerre Gifford; 4 Bartlett; 1 Seckel; 2 Flemish Beauty; 3 Beurre Hardy; 2 White Doyenne; 5 Winter Nelis; 2 Easter Beurre. There is no better flavored Pear for drying or canning than the Bartlett; but owing to the softness of the core when ripe enough to dry nicely, it will not hold to the fork of a paring machine, and is not so profitable for the drying factory as the Flemish Beauty, which is round, smooth, easily worked on the machine, and is one of the very nicest drying Pears. But for home use

the Bartlett is the best, and brings the highest price in market of any dried Pear. The Flemish Beauty is an excellent drying Pear. Its shape is round and smooth, it dries white, has a fine flavor, and for easy working and desirable qualities has no equal. Of this there is no mistake. The best shipping Pears for Eastern markets are the Winter Nelis and Easter Beurre. At one time the Bartlett and Beurre Hardy were thought the best, but they do not keep well, and arrive there when Eastern Pears are plentiful, while the winter varieties get there in a sound condition, and at a time when Eastern Pears are not brought into competition at lower prices.

With Pears as well as Apples, those varieties that keep longest should be cultivated in the greatest quantities. The Bartlett and Flemish Beauty being excellent to dry and can, should give them preference for this purpose.

The Winter Nelis is the very best flavored Pear for our home market. The Easter Beurre is chiefly valued for its long keeping qualities. It lasts after all others are gone. The Pear tree is peculiarly adapted to our soil and climate. In no country does it grow to greater perfection, or produce finer fruit. It will grow on heavy, wet soils better than any other fruit tree that we know of.

Quinces—Two of the Orange variety, which is the only one worthy of cultivation. Quinces are excellent baking fruit, and for canning, either alone or with Pears. The trees should be grown like a shrub, and not be pruned up into a slender tree.

Plums—One Cherry Plum; 1 Early Golden Drop; 1 Royal Hative; 1 Jefferson; 2 Columbia; 2 Green Gage; 2 Ickworth's Imperatrice; 2 Coe's Late Red. The latter Plum will last till

Christmas, and is desirable chiefly for its late keeping qualities. Best for canning—Green Gage. Best Plums for drying are Jefferson, Washington, Ickworth's Imperatrice, Columbia, the Reine Claude de Bavey, General Hand, and Royal Hative. The Columbia and General Hand are really the best, as the flesh of both is remarkably firm and substantial. The Royal Hative is a fair drying Plum, and an immense bearer. Soft, mushy Plums are not desirable for drying, but the Plum that has a rich flavor, solid pulp, and is easily pitted, is a drying Plum. The Quackenboss is called the best shipping Plum, owing to its beauty and keeping qualities.

Nurserymen graft or bud a good many Peach stocks with Plums. The following kinds of Plums do as well or better on Peach than on Plum roots when planted on light, drained soils, (but remember that for heavy soils, Plums do best on Plum roots) viz.: Royal Hative, Yellow Egg, Jefferson, Imperial Gage, Duane's Purple, Columbia, Reine Claude de Bavey or late Green Gage, Ickworth's Imperatrice, General Hand. The Prunes all do well on Peach roots in light soil, also. The Plums that do not succeed well on Peach roots are: Quackenboss, Early Golden Drop, Coe's Golden Drop, and Coe's Late Red, also the true Green Gage. The Quackenboss will grow well on Peach roots for a few years, and then all at once die.

Petit Prunes—2 Grosse Pruned'Agen; 2 Petit Prune d'Agen; 3 Fellenburg. The Fellenburg, or German Prune, is the best drying Prune, and is coming into high favor on that account very fast. It pits naturally, is high flavored, with firm flesh. The Petit Prune d'Agen stands second, but is rich and fine, though small. The Grosse Prune

d'Agen is best for shipping, owing to its beauty, size, and solidity. It adheres to the pit tenaciously. But now that Mr. Tarleton's clingstone fruit-pitter is invented, we regard the Grosse Prune d'Agen as the most desirable drying and canning Prune. For a market Prune, it is by far the most desirable, especially for shipment to the East.

Peaches — Freestones: One Briggs' Early, 1 Early May, 2 Hall's Early, 2 Early Crawford, 2 Strawberry, 2 Late Crawford, 2 Salway, or one each if you choose.

Clingstones: Two Lemon, 2 Orange, 1 George's Cling, 1 Newington. The clings are made valuable for putting-up fruit, by Tarleton's pitter, and may be cultivated with profit in large numbers. This list of Peaches has been carefully revised to suit the San Jose climate. Persons selecting varieties for hot, in dry sections of country, may choose differently. Please bear this in mind, that climate rules in choosing varieties.

Nectarines — One Hardwick, 1 New White. The Nectarine is not generally a favorite for eating, but as it is smooth-skinned, like the Plum, it makes a very fine fruit when dried or canned.

Apricots — Two Early Golden, two Moorpark. Nice for cooking, canning, and drying, as well as for eating. This fruit ripens before Peaches, and is an indispensable fruit for succession in a family orchard. The Moorpark is the best market Apricot, and is generally held in the highest estimation. The only thing not in its favor is, it ripens unequally. While one side of a specimen is soft, the other is hard. Not so with the Early Golden, it ripens equally all through.

Cherries — Two each of Governor

Wood, Black Eagle, Black Tartarian, Black Arabian, Coe's Transparent, Pie or Kentish, Cleveland, Bigareau, Napoleon Bigareau. The Black Tartarian is the most profitable market Cherry, owing to the regular and good bearing quality of the trees, and to the solidity and carrying qualities of the fruit, which will not discolor when bruised, and is large, handsome, and of fine flavor. There is no better canning fruit than the Cherry; also good dried. Do not be deterred from planting Cherry trees from fear of the birds destroying them. Better double or treble the number and feed the birds. Remember that the birds want "meat as well as bread," insects as well as fruit, and that you will be the gainer to call them to your orchard, even if they eat all of your Cherries. But don't be alarmed; you can manage to get a taste while they are enjoying a meal without shooting or otherwise destroying the birds.

Mulberries — Black and Downing's Everbearing. Trees which are ornamental as well as good for fruit. This fruit ripens about the same time as Cherries. Birds are very fond of them. Plant these for the birds, among or near your Cherry trees.

And now one more word about Cherries and birds. If you make several pickings of the Cherries, instead of waiting till they all get ripe on a tree before picking any, you will get ahead of the birds. Go over the trees every day or two while the fruit is ripening.

Figs — Take a variety. The Black Brunswick, White Smyrna, and Brown Turkey are as good as any. The strong-growing kinds make fine, spreading ornamental trees.

Oranges — One of the very best is said to be the Konah — a Sandwich Island variety. The St. Michael, Sweet Sicily, Sweet Florida, Sweet Acapulco,

Mission, etc., are all said to be fine, but our personal knowledge and information on this fruit is too limited to venture special advice as to varieties further than this: for several trees of different variety, get leading grafted sorts. Experience is yearly showing more and more the adaptability of this semi-tropical fruit to all portions of our State below the snow line in altitude. It requires shelter from winds to succeed first rate anywhere. After the tree is large enough to provide a thick shelter of leaves, it will withstand our heaviest frosts without injury. But while small it should be protected by a tent shelter made by three stakes tied together over it, and wisping straw around or covering with sacking, so as to break the frosts during winter. The Orange should be regarded as a most indispensable fruit in a family orchard, and for market it will pay in any warm sheltered locality. In Italy the finest Oranges are grown in the coolest climate near the coast, in a very sheltered place, in light, rich soil. The Orange is a beautiful evergreen tree, at any season, and when in blossom or in fruit is almost matchless for rich beauty. It is worthy a place in every front yard where there is appropriate room for any sort of large evergreen.

The same may be said of Lemons, Citrons, and Shaddocks, which belong to the same family. The Lemon is quite as hardy as the Orange. There are several choice varieties. These trees being evergreens should be treated the same as other evergreens. A ball of earth should be taken up with and about the roots, and be either boxed or tied in sacks before moving. In transplanting disturb the ball of earth about the roots as little as possible.

Olives—The time will come when no orchard will be considered complete in

California without the Olive tree. What butter is to the American housewife, that is Olive oil to the Spanish and Italian domestics, in those portions of the country at least where the oil is abundantly produced. It is used upon their tables as butter is upon ours; is used in cooking the same, and is an indispensable article for many other purposes, of which it is hardly necessary to make mention here. The tree may be grown as an ornamental evergreen. It is easily propagated from cuttings from one to three inches in diameter. The tree will do well on dry soil, but the cuttings will grow only in moist. Include a few trees in your order to the nurserymen.

Japanese Persimmons—There are several grafted varieties of this new fruit in America. Get a few trees. They promise to be worthy of cultivation in family orchards. It is a rich fruit.

Nut trees—Black Walnuts: These make tall trees. It would pay any man who has a place to plant a grove of these for fruit and for timber, which is very valuable. Plant several in the orchard anyway. The American Black Walnut is the only sort worth cultivating. The California is of no value.

The Pecan nut is also a valuable fruit, and the timber is almost as good as hickory for wagons, etc. It is a native of a climate similar to ours, and will be a success in California.

The Hickory so far as tried appears at home in California. It is worthy of a trial everywhere.

The Chestnut is no longer an experiment. It grows finely and bears abundantly. The three leading varieties are the American, Italian, and Spanish. Try a half dozen of each.

The English Walnut is really a semi-tropical nut tree of low branching habit. There is no nut of greater value

for food. It is at home in California, and must prove of material value to the State. Six trees at least should be planted. The Black Walnut and so-called English Walnut and Chestnut trees are grown in nurseries quite extensively, and are easily moved at one and two years of age, and can be transplanted with safety. The Pecan and Hickory are better planted where they are to grow. Good seeds should be furnished by nurserymen and seedsmen generally.

The Almond, although a nut, partakes in its nature of the habits of the Peach tree. The early blossoms are tender to frost, but it is found to do admirably in California, and quite extensive orchards are now growing in various parts of the State—several near San Jose with success. Half a dozen trees should be included in every orchard. The Languedoc and Ladies' Paper Shell are good standard varieties. The former is a fine bearer, and withstands the frosts best. Several new sorts of soft shells have lately been produced from seed, but we do not know which of them to recommend.

If you want long-lived and strong-growing trees, get those that are growing on Almond roots, in preference to those grafted or budded on Peach tree roots. The Almond on Almond roots makes a tree that will withstand a drought better than any other fruit tree. On Peach roots it will do well in light moist soils.

Grapes—More attention should be paid to family vineyards. There is no fruit of more value than the Grape for food. For a trellis, plant out American varieties, such as the Sweetwater, Delaware, Catawba, etc. A good selection of foreign varieties must include about 10 Rose of Peru, 10 Flame Tokay, 50 White Muscat of Alexandria, 10

Black Hamburg, 10 Black Malvoisie, 10 Zante Currant Grape, and more or less of other kinds as you may choose.

The White Muscat of Alexandria is the very best raisin Grape. Any family can make its own raisins nicely, and send some to market. The best shipping Grapes are White Muscat of Alexandria, Verdal Black Morocco, and Flame Tokay, so far as tried, for profit. For canning, high-flavored Grapes are best. The American Grapes are best grown from rooted plants. Cuttings of all foreign varieties do about as well as rooted vines. A cutting should be eighteen inches to two feet long. The strongest new growth of vines makes the best cuttings. The lower end of the cutting should be planted at least one foot below the surface, and the vine be bent around or laid slanting to the surface, and planted firmly in the soil, leaving one or two buds exposed above the ground. No large hole is needed. A narrow spade will remove all the earth necessary to introduce the cutting. If the ground is previously put in proper condition, two men can plant an acre in one day. Lay off the ground so as to plant them about 8 feet apart.

For Grapes, Blackberries, Raspberries, Currants, Gooseberries, and Pie-plant, we advise laying off rows about 8 feet apart, or to be uniform with the orchard, two rows for every one in the orchard. One end of the orchard can then be planted with these things, uniformly as to distance one way. The rows will then be handily cultivated with horses. The berries may be planted closer together in the rows, say one to three feet apart, when planted. The Rhubarb not less than three feet apart in the rows.

Berries—These should not be planted in an out-of-the-way place, and neg-

lected. They will as well repay for care as anything else in an orchard or garden. Perhaps they more properly belong to the garden. Irrigate when you can.

Blackberries—Plant 50 Lawton and as many Kittatinny. They are excellent fruit for the table, to can, and to dry. For sandy soil the Kittatinny is the best.

Raspberries—Twenty-five plants in variety. Good healthy roots should be selected; the tops will grow from the roots. Irrigation is beneficial.

Currants—The Cherry Currant is by far the best, but a few of other varieties may be tried. Twenty-five plants will give a family all they want. A moist soil is best for Currants. If they are planted to correspond with rows of Grapes, plant 8x3 feet, and allow the stalks to multiply in stools. It saves trouble in cultivating with a horse to plant uniformly in rows.

Gooseberries—Plant same distance as Currants. The Houghton Seedling is the standard kind. Allow them to branch low down, and grow about as they please, trimming only once each season.

Strawberries—On almost any kind of soil Strawberries will do well if abundantly irrigated. The surface soil must be kept moist. During fruiting time leaves absorb through the roots a great deal of water. Persons who can irrigate should have a nice bed of Strawberries. The Longworth Prolific, the Triumph de Grand, and Jocunda are standard sorts on this coast.

Rhubarb and Asparagus, though belonging to the garden, are standard plants, and require special care. Set Rhubarb about the same distance apart as Currants. Manure liberally, and water if convenient. Asparagus may be planted in beds, 18 inches apart,

and manured heavily, keeping down all weeds. All nurserymen keep Rhubarb and Asparagus roots for sale, as also the other trees and plants aforementioned.

We invite our readers to ask questions upon all points wherein they want information not given in this article. We can not pretend to give every instruction in a single article like this, but we aim to be strictly correct in what we do say.

FLOWERS FOR CITY GARDENS.

BY W. C. L. DREW.

A question often propounded by city residents is, "What flowers would you furnish a small garden in the city with, which are of a showy nature, and possess the agreeable quality of fragrance?"

In spring we have many flowers possessing both of the desirable qualities of show and fragrance, but in summer and autumn such plants are in the minority. In preparing a small garden in the city, however, we would not recommend the laying of it out in flower-plots; the greatest satisfaction will be in a well kept lawn, small it may be, but if well attended to, nothing will be more pleasing. But if the owner wishes to lay out some flower plots, such should be small and near the walk and fence.

As to our subject, however, we will proceed, first considering such ones as possess fragrance. For spring flowering the Violet is a host in itself; single and double they may be had in white, blue, lilac, and a number of shades. The Auriculas and Primroses may be had in such a vast variety, that with them alone we could complete one of the finest little flower gardens our eye has ever been delighted with. The *Myosotis dissitiflora*, with its grand

spikes of densest blue, should be one of our first selections. Then the Pansies, in such a profusion of colors, are quite sufficient to fill a large garden of themselves with ever-changing beauties.

Among the bulbous plants, if we take time by the forelock and plant in the fall, we find some of our most fragrant and showy beauties, for instance, the grand Hyacinth, double and single, red, white, blue, yellow, lilac, and of other colors innumerable. The Narcissus, which is only equaled by the Hyacinth, and the delicate little Scilla will satisfy any one. To these already named may be added the Crocus, Anemones, Ranunculus, Tulips, the showiest flower that grows, and the grand queen of flowers, the Lily.

For early summer flowers we would include the Wallflowers, Daisy, Mignonette, without which no garden is complete, and Tussilago fragrans, only equaled for fragrance by the Mignonette itself.

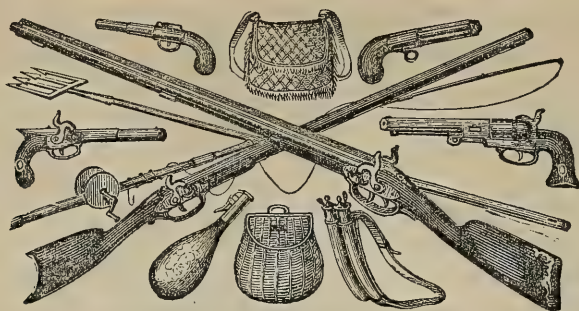
For late summer and autumn flowering, we have a few fragrant flowers which are not excelled by the spring bloomers. At the head of these we place the Tuberose, our favorite, the delicate white pips of which are unequaled for fragrance. The Verbena is desirable both for show and fragrance; and we would also include the Phlox Drummondii, Sweet Alyssum, and Petunia. We have omitted the various shrubs, among which are very fragrant and showy bloomers. From the varieties mentioned, the most fastidious can complete a garden of which Flora herself would be proud, and one which if attended to, will be a thing of beauty to the eye, and a bright spot in the memory.

FAT haunches have lean pates.

RAISING ROSES FROM SEED.—To raise Roses from seed, take the seed when fully ripe, separate them from the pulp, mix them with moist sand, put them in a little box or flower-pot, and then place them in the cellar, taking care that they are kept moist all winter. In the spring sow sand and all in a common hot-bed, and when the plants are about an inch high transplant them into light, rich soil, shading them till well rooted.

ORANGE CULTURE IN SONOMA VALLEY.—The Petaluma *Courier* of the 13th has the following: Orange trees are being planted in Sonoma Valley to a considerable extent, and their culture promises to become an important industry. Large numbers of them will be planted this season, and those who have had experience with them there say they do remarkably well, bearing the rich fruit in abundance and of the most delicious quality. One tree on the ranch of Caleb Carriger has at this time 1,400 Oranges, by actual count, in their various stages. The tree is five or six years old, and in good, healthy condition.

A VENERABLE ROSE BUSH.—At Hil-desheim Cathedral there is a Rose bush which is believed to be over a thousand years old. In recent years it seems to have been getting into decrepitude, and fears have been entertained that it was going to die. The help of the most renowned gardeners has been called in to prevent this, if possible, and several foreigners have been on the spot for this purpose. Whether it be due to their endeavors or not, the old thing seems to have taken fresh heart again. Out of the root knobs of the bush a new sprout has appeared, which is growing so vigorously that there is good hope that this venerable Rose stock may yet "renew its youth."



Boat and Gun.

PROTECT OUR GAME.

A movement is on foot in some of the northern counties to petition the Legislature to pass an effectual game law. We cordially indorse this movement, and trust that it will be taken up generally all over the State. Petitions should be forwarded from every county, setting forth the facts, and calling for a remedial law. We dislike the term "game law;" but a law for the protection of food fish, wild animals, and birds of use for the food and comfort of man is absolutely necessary, let the title of the act be what it may. At a period by no means remote, running game and wild fowl were very plentiful around the bay of San Francisco, but they have been driven off or exterminated by the wanton ravages of misnamed sportsmen. In fact, true sportsmen never wantonly destroy game, but the promiscuous army of "pot shots" blaze away at everything, and respect not the close seasons, provided by law to give "the hunted deer" and other game that repose which is necessary for natural increase.

The measure of success of the war of extermination upon game in this vicinity may be estimated by comparing the present with the past. We have before us a charming little volume written by

Mr. John Webster, an old time Californian, detailing "The Last Cruise of the Wanderer," which sailed out of the Golden Gate June 3, 1851, accompanied by the schooner Ariel, as tender, bound for the islands of the Pacific to found a Papuan republic in the yet unexplored island of New Guinea. Benjamin Boyd, the accomplished but erratic owner of these vessels perished through the treachery of the islanders of St. Christophal, but his genial friend and associate survived to tell the story in one of the most charming narratives of exploration extant. Speaking of the sport to be had near this city in 1851, Mr. Webster writes: "In the vicinity of Saucelito is found an abundance of game—elk, deer, bears, geese, ducks, etc.—which afford ample recreation to the sportsmen who may be on board any of the vessels lying in that vicinity." Now, where has the game gone to? There is enough wild domain in the amphitheater of mountains surrounding Saucelito to shelter and sustain a large supply of game; but it has been all but exterminated. Every device and contrivance has been resorted to for killing it. There is still sufficient left to stock the territory, if closely protected for a few seasons. But the law is insufficient for the purpose. The story is the same from other districts. Where game was abundant a few years ago it has now all but disap-

peared. In the valleys of the southern and central belts, and in the Coast Range and foothills, game has become exceedingly scarce. From the northern counties we have the loudest complaints, for there organized bands of men have located themselves, who make the destruction of food game a business. Where the carcasses can be packed to market it is done; but we have reliable information from Siskiyou County which reveals a state of things demanding the prompt attention of the Legislature. Our informant writes:

"There are gangs of men, many of them sent out and equipped by glove factories with horses, wagons, telescope-repeating rifles, etc., who do nothing the year round but slaughter game, and mostly for their hides alone, sparing neither doe nor fawn; and flayed carcasses are to be seen all over the mountains where these miscreants operate, and who, to make sure that not one shall escape, fire the mountains and drive the game into a small compass, where they fall a sure prey."

This is an enormous evil, and should be promptly remedied. The loss to the people in food alone is a serious item. Wild animals belong to the commonwealth, and should not be indiscriminately slaughtered for the profit of any special class. The practice above alluded to is a gross abuse of the freedom to hunt game under our laws; and, therefore, those only who abuse the privilege would suffer by stringent penal enactments rigidly enforced. But the public loss is not limited by the wholesale destruction of food animals. The morale of the population is lowered, and their æsthetic taste is dwarfed by it. What can be more depressing to a lover of field sports and an admirer of natural beauty than a country devoid of wild game? How-

ever charming the landscape, it is a solitude. Life lacks a main element of enjoyment. Hence the large sums spent annually by civilized men in acclimatizing birds, animals, and fishes; and it is a remarkable fact that California quail are more plentiful in many parts of New Zealand and Australia than they are in the beautiful valleys of this State. They are carefully protected, however; so, also, are deer, food fish, and winged game, which have been acclimatized at heavy expense and with much patience.

Our Siskiyou correspondent suggests a remedy for this state of things, and we agree with him generally. He points out that the smallness of the reward paid to informers under the existing law makes the statute a dead letter. The penalty for the violation of the game law is \$25, of which a moiety goes to the informer. Now, no one will spend perhaps a week with a posse of men hunting up offenders for such a trifling sum; but if, in addition to imprisonment, a fine of \$500 were levied in each case, one-half going to the informer, an inducement would be given to men to go after these marauders. The law should prohibit the killing of females and young of food animals and birds, and of males in the close season. Moreover, for the purposes of such a law there should be no county lines, the nearest Justice of the Peace being empowered to deal with the case summarily; otherwise, journeys of fifty miles might be necessary before the law could be put into operation. The same law should apply to the arrest and pursuit of criminals. By passing such a law, in a few years the vast natural parks of this State would be stocked with every description of game, to the great comfort and happiness of the people.—*Evening Post*.

LAKE CHABOT HATCHERY.

The facilities for fish hatching at Lake Chabot, near San Leandro, are about being utilized by the State Fish Commissioners. Last season the fish hatching apparatus was located at Berkeley at the grounds of the State University, but water growing scarce it became necessary to remove to some other locality, where the ova could be properly hatched. Mr. Chabot kindly offered his sheds near the lake, where an abundant supply of pure, cold mountain stream water could be had, and the entire machinery and appliances were removed to the present locality. The Sportsman's Club has caused to be hatched several hundred thousand trout and salmon. Only recently 80,000 young trout were placed in Lake Merced, and there are now several hundred thousand young trout ready for shipment to various lakes and streams throughout the State. Mr. Chabot has now near the lake 80,000 young trout, varying from three to seven inches in length, which will shortly be turned loose in the lake. The carp which were procured last summer from Sonoma have grown amazingly fast, and about thirty of them have been placed in the lake. They average four-teen inches long. The State Fish Commissioners have secured hatching privileges here also, and the troughs for hatching the ova are now being made ready for the reception of a large lot of ova of the New Hampshire mountain trout, which will arrive here in a short time. The manner of hatching the ova is interesting. A box thirteen feet long by twelve inches wide is made water tight, and coated inside with asphaltum, which keeps the water clear and pure, and prevents the accumulation of fungus on the bottom and sides. In-

side this is a wire box, or several of them, about two feet long, into which are placed the ova, and pure cold water is permitted to flow over them. In fifteen or twenty days the fish are hatched, and drop immediately through the bottom of the box and swim about in the water. The colder and purer the water is the healthier will be the fish. In a few days the little fish are large enough to be fed, which is done by pouring into the water some "clabbered" milk, upon which they feed voraciously. Up to this time they have lived in their natural way from the umbilical sac which nature has provided. The little trout are then permitted to swim at will along the entire length of the box, the water being a running stream through it always. When large enough to take care of themselves they are placed in some stream or lake. With the expected consignment of ova are also some grayling and whitefish spawn from Lake Superior. The wholesale slaughter of fish in the streams which feed Lake Chabot is said to be one of the principal reasons for the scarcity of fish in that beautiful body of water; for in the spring the fish, obeying a natural instinct, ascend these streams, and are speared with pitchforks by hundreds by those living near the streams, and the only manner, it seems, of preventing this wanton destruction, is to have the game law so amended as to provide a heavy penalty for the offense, and give to the informer one half the fine. Mr. Chabot is entitled to much credit for his liberality in affording gratuitously, as he does, such rare facilities to our Fish Commissioners, and is deserving of the thanks of the people.

SALMON have made their annual appearance in the streams of Sonoma Co.

OUR FIRST AND LAST BLACK BASS.

Even when a mere boy in the East, we esteemed the black bass as a prince among his fellows, and can never forget our first prize. We had seated ourselves at the foot of an old sycamore directly on the margin of the river Little Miami, and among its serpent-like roots we were fishing for a number of tiny rock bass that we had chanced to discover there. We baited with a worm, and while doing our utmost to capture a two-ounce fish, we were suddenly scared by the appearance of a black bass, which took our hook, and was soon dangling in the top of a neighboring bush. Our delight at this unexpected exploit was unbounded, and after bothering our friends with an account of it until the night was far spent, we retired to bed, and in our dreams caught the same poor fish over and over again until morning. From that day to this, rivers and fish have haunted us like a passion.

Like the trout, the black bass seem to be partial to the more romantic and poetical places in the rivers which they frequent. On the river Little Miami, for example, after we grew older, we used to enjoy the rarest of sport at an old and partly delapidated mill-dam, which was covered with moss, and at the foot of which were some of the nicest "deep holes" imaginable. Wherever the timbers of the dam formed a "loop-hole" of retreat, there we were always sure of finding a bass, and sometimes a whole "school" of them, and, according to the nature of that gregarious and voracious fish, we generally basketed the whole of them before they ceased to take the live minnow bait. And we also remember an old mill, in whose shadowy recesses, far down among the foundation timbers, the

bass delighted to assemble, and where we were wont to spend many of our Saturday afternoons; but our favorite expeditions were those which occupied entire days, and led us along the banks of the Little Miami, in the vicinity of its mouth, and far beyond the hearing of the mill-wheel or the clink of the blacksmith's anvil. At such times the discovery of old sunken logs was all that we cared for, for we knew that the bass delighted to spend the noontide hours in their shadow. And when we could borrow a canoe or small skiff, and obtain a foothold on the extreme point of a wooded island, so as to angle in the deep, dark holes, we seldom failed in realizing all the enjoyment that we anticipated. And, if we chanced to come across a party of fishermen drawing the seine, we were sure to forget our promise to our parents to return home before sundown, and, far too often for a good boy, did we remain with them until the moon had taken her station in the sky. To count the fish thus captured, and to hear the strange adventures and exploits talked over by these fishermen, was indeed a delightful species of vagabondizing; and we usually avoided a very severe scolding by returning home "with one of the largest bass ever caught in the river," which we may have taken with the hook, or purchased of the fishermen. But these were the "times of the days of old," and we almost feel young again when we remember the glories of the Little Miami, in regard to its beautiful scenery and its fascinating fishing, but these youthful days are forever departed.

But here we can not resist relating an event which took place in our later years, while bass fishing in a favorite angling stream in Kentucky. We were float fishing with a live minnow for bait

on an old log which projected a short way into a stream having very little motion in it. As the bass at last seemed disinclined to bite, we leisurely stretched ourselves lengthways on the log, resting on one of our elbows toward the water. All at once while in this recumbent, indolent, and resting position, we observed our float gently drawn under, and then more quickly sink out of sight. We knew that this surely foreboded a bass at the other end of the line, so we immediately made an attempt to gain our legs and seize our rod, but in doing so, and pressing on our elbow to rise, the rotten surface of the aged log gave way, and the result was to find ourselves falling sideways into the river, and in an instant under the water in a deep hole. Being, however, a pretty good swimmer, we quickly rose to the surface, and gained the shore, which was close by, and seizing hold of some convenient bushes, readily made a safe landing, though minus our gold spectacles which had, of course, sunk to the bottom. Getting a good wetting was of but little consequence, as the weather was very warm, but what was of greater moment to us was the loss, probably, of a good bass, which we found, upon taking up our rod, had broken a strong gut leader, and gone to parts unknown. By getting a blacksmith the next day to fashion a sort of handy rake, after much labor in searching the bottom of the hole, we finally recovered our spectacles, greatly to our satisfaction, as there was no store in that part of the country in which we could replace that to us very necessary ocular help.

We have enjoyed some remarkable bass fishing sport in our time in our Eastern life. We remember one day in particular off Long Point, Lake Erie.

We commenced fishing at nine o'clock A. M., from a boat, trolling with rod and line, baiting with live minnows. The sun was shining brightly, and the only sounds which floated in the air were the singing of birds in the neighboring woods, the rustling of the forest leaves, and the gentle rippling of the small waves of the lake stirred by a gentle breeze. We fished a little more than three hours, but in that time we caught no less than fifty-two bass, a dozen of which weighed over four pounds, and the great majority not less than two pounds. Such remarkable luck had but seldom been heard of before in that vicinity, and for several days thereafter that part of the lake near Long Point was much frequented with anglers in boats. Among these many and splendid black bass, were eight pike or pickerel, averaging about four pounds each, which fell victims to our trolling lines.

The bass is a very active fish, and, excepting the salmon, we know of none that perform, when hooked, such desperate leaps out of the water. They are taken trolling with a minnow, or sometimes fishing with a gaudy fly, which are unquestionably the two most successful methods. They commonly lie close to the bottom, rise to the minnow or fly quite as quickly as the trout, and are not so easily frightened by the human form.

PEARL FISHING IN TORRES STRAITS.

The pearl beds in Torres Straits are very different to the Ceylon fishery off the coast opposite the villages of Con-datchy and Anipo. This bank measures something like twenty miles long by eight or ten miles broad, and several feet thick. None of the beds that I have worked on in the Straits seas o



THE REINE CLAUDE DE BAVEY PLUM.

channels have covered more than a few hundred yards, and the layers are generally very thin. The oysters, however, procurable in some of the Straits' beds I think are equal, if not superior, to those obtainable in the locality named.

There is an impression on the minds of many people that the "fish" encased in pearl shells is not fit for human food in the way that the common oyster is. This is a great mistake. If stewed, curried, or in fact properly cooked in any way, the pearl oyster is very palatable and nutritious. Our crew used them extensively, and generally preferred them to the salt junk.

The work of procuring the pearl oyster is attended at times with great risk from sharks, sudden squalls, etc., and is on all occasions, and under the most favorable circumstances, a hard, comfortless, and laborious occupation. No doubt the employers of labor in this capacity make a good pecuniary haul from the speculation, but the poor laborer "gets more kicks than halfpence," while many lose their lives. One of our divers lost his life by the stupidity of his "tender." He had gone down to work below in the ordinary way. The sea was calm, but there was a strong current running, and there was rather an ugly reef bordering the bed we were working on. When he had been gone down about half an hour, he signaled—as the tender surmised—to have more line let go. Coil after coil was "paid" out, and still the tug came for more. After a time the tender got alarmed and called for the other diver, to whom he explained the quantity of line he had let go, and that the demand was still unsatisfied. Immediate steps were taken to see how matters stood. It was too late, however, for on the second diver descending he found the life line and tackle all

entangled on peaks of the reef, while the unfortunate diver stood upright, with his back against a perpendicular point of the reef, against which the tide jammed him as tightly as if he had been tied there with strong cords. He had his right hand extended, in which he grasped a knife—similar to what most divers use below, and with which he had severed the air tube, etc., doubtless when he began to suffocate, and with the idea that by this means he would be able to reach the surface. Let his thoughts or plans have been what they may, they were frustrated, for the poor fellow was quite dead when brought to the boat. This sad fate is only one of many that occur from year to year, perhaps not exactly in the same form, but in one way and another connected with the hazardous nature of the occupation.

The cleaning of the external part of the shells, opening them to extract the meat, and searching for the spherical pearls that are found inside, is a dirty, unpleasant occupation. Some of the spherical pearls are very beautiful. The theory of their formation is very singular. It is thought and asserted by some zoologists that a grain of sand or other foreign substance gaining access to the interior of the oyster, irritates the tender inhabitant to such an extent that in self-defense it immediately begins to emit the fluid secretion it is provided with, and thus coats the intruding atom, which increases day by day in size, and is composed of precisely the same material that coats the inside of the shell, and is called in its hardened condition "nacre." Some of the beds I have worked at produced pearl oysters that contained from one up to six spherical pearls, while other beds have not contained one pearl in fifty oysters, or even more. From this

I infer that the character of the ground the bed is formed on, the strength of the current, or other circumstances that I can not explain, has something to do with the matter. Whatever may be the explanation, certain it is that there is a considerable difference in the productiveness of some beds to others in this particular, as well as in the quantity of oysters obtained.

One day I set out from the schooner with a crew of five hands. We had our boat provisioned for a three weeks' trip, our destination being a bed of pearls that lay off an island to the north-east of a spur of the great Torres Straits coral reef. We started early in the morning, with the idea of having plenty of time to take up a central position on the bed, and get everything in order for commencing work uninterruptedly the next morning. There was not a ripple upon the water, nor a breath of wind. We had four oars out, and we glided through the still, placid lake—for it looked like nothing else—laughing, singing snatches of songs, and talking as merrily as if on our way to a wedding. In our course we had to run parallel with and cross the spur referred to of the main coral reef. As we sailed along its edge, it looked like a floating forest of diminutive snow-capped trees and shrubs below the surface. When we had reached about half the distance along this spur it curved round in a semi-circle, and to get across we had to follow its contour. We had not far to go before we came to an opening where the caps of the reef receded sufficiently low beneath the surface to admit of our getting through. The boat's bow was turned into the gap, and we pulled away under the impression that for the time we were done with the difficulty of crossing this barrier. This idea was soon

exploded. We had not got more than 200 yards from the mouth of the opening when we had to "call a halt," for in front of us again appeared the reef. As we had plenty of time on hand, the stoppage caused us no irritation, and we pulled in our oars, lit our pipes, and determined to rest awhile and look about us.

THE DESTRUCTION OF SMALL FISH.—Mr. Smith has introduced in the Assembly a bill to prevent the destruction of shrimps and small fish, such as are known to be the usual food for salmon and large fish. His plan is to stop the taking of these small fish to dry them, as is now practiced by the Chinese fishermen, and also to stop the drying of such fish. It seems that the Chinese catch and dry these small fish, as well as the fry of large ones, and export them to China in enormous quantities. Good judges of such matters hold that the drying and exportation of these small fish will, in time, destroy the fisheries in San Francisco Bay, and the streams emptying into the same.

FATAL RESULT OF CLOSE PRUNING.—The Russian River *Flag* notes the following case of fatality to Grape vines through close pruning: From E. Catlin we learn that near the town of Sonoma some of the oldest vineyards, containing many acres, have either been abandoned or were being reset with new vines, and upon examination he found that the death of the vine was caused by too close pruning. The constantly growing trunk of the main stalk had closed in around the places pruned, encasing insects and debris until it had become wormy and diseased. One of the vineyards now being grubbed out contains not less than 160 acres. Mr. Catlin is an experienced viniculturist.

Selected Articles.

THE LATER AUTUMN.

BY AGNES HILLS.

So slowly creeps the river on its way,
But that the red leaves falling from my hand
Float on toward the farewell of the day,
Out of my sight and far beyond the land,
It might be some enchanted river deep,
Stayed in mid course, and locked in endless
sleep.

Still as the river is the brooding sky,
With all its gray clouds folded into rest;
Voiceless and dreaming seem the hamlets nigh,
Whose shadows sleep upon the river's breast;
Still river and still shapes all seaward tend,
And e'en the sea is quiet at the end.

This is the ruined quiet of the gods,
All that is left us of the golden years
When over wood and stream and moss green
clouds
Slept softest peace, which brought no rain of
tears
To yearning eyes, as these sad, soundless days,
Which glide like phantoms through the autumn
haze.

A ruined quiet, ghost of sweeter peace,
Swoon before death and darkness—even so
Let the fierce whirl of life a moment cease,
And let the noiseless river seaward flow
Through the hushed land and frost-white scent-
less flowers;
Remain the sadness—still the calm is ours!

We have known tumult in the years by-gone,
Strange glooms of battle we shall know no
more;

Steady and calm our life tide floweth on,
Glassing the silent shapes along the shore;
No toiling in the falling of the year,
No haste, no rest, for the great sea is near.

Give thanks for calm long looked for, fallen
late,

Though it be but the calm of dying suns;
Give thanks for silent days, though round them
wait,
With dead sweet lips the ghosts of earlier
ones.

These are the only guerdons age demands—
Calm life, still days, and peace of folded hands.

Flow, silent river, to the silent sea!

We are content with life, content with all.
The autumn moments bear us tenderly

To the deep winter, and the red leaves fall,
And, dying, nurture for some new spring's
hours

A rarer birth of far diviner flow'rs.

THE BANANA TREE.

As nations progress, commerce, the
great agent of civilization, seeks to
equalize so far as possible the comforts
of mankind. Of course, its first motive
is its own profit, but philosophy looks
chiefly at results.

The merchant scans the horizon be-
fore him, noting the products that na-
ture offers in one direction, and has
withheld in another, and if he sees that
an exchange of commodities can be ef-
fected with profit to himself, he goes to
work to bring it about. Navigators and
explorers prepare the way by the
news they bring of novel resources, the
merchant avails himself of this knowl-
edge, and, next, the cultivator steps in,
if he sees a chance of transferring to
his own country, the valuable plant
that has been discovered in a distant
clime. Thus, Cotton, Tobacco, the
Potato, the Grape, and the Mulberry
for the silk-worm have made the tour
of the globe. Our country seems in
one or other of its vast latitudes, to be
a fitting recipient for all the best pro-
ductions that other lands can boast,
and there is no reason why we should
restrict the range of our acquisitions,
for very often it will be found that a
soil, apparently useless for all our sta-
ples, is just the thing for something
not previously introduced. The fact
that an article did not grow there be-
fore, is no better argument against its
future success than the reflection that
only red men were the aborigines of
America would be against the possibi-
lity of European white men living here.
Take, for example, that valuable fruit,
the Banana. At present it is not culti-

vated to any great extent in this country, though it exists on our gulf coast, and in some parts of California; but we believe its cultivation might be profitably carried to many places even as far north as Maryland.

Throughout the tropical regions, the Banana forms the chief subsistence of whole races of men. It is, indeed, inferior to grain in nutritive qualities, but produces much more yield to the acre. Half an acre planted with wheat in Europe would support only two persons, while in Bananas, in the tropics, it would maintain fifty. It has been calculated, says Marion, that a plat of ground 100 yards square in Bananas, will yield 4,000 pounds in nutritive substance, and, consequently, that this fruit is, in amount of product, as 133 to 1 compared with wheat, and 44 to 1 compared with potatoes.

The easy conditions of growth, and the facility of its cultivation are also greatly in favor of the Banana. The tree in its tropical home is about fifteen feet in height, consisting of a simple stem, round and straight, greenish yellow in color, and surmounted by a spreading crown of broad oval leaves, six feet in length by eighteen inches in breadth. A thick, strong back stem runs through the centre of the leaves, but they are, nevertheless, so delicate that the wind quite frequently tears them.

A tuft of blossoms appears in the middle of this leafy crown some six or eight months after the germination of the plant. These are succeeded by a cluster of delicious fruit some eight inches in length by one in diameter, so familiar to us in our cities. These clusters, which often weigh from 50 to 75 pounds, sometimes include from 100 to 150 separate Bananas. When the cluster is cut off the severed stem dries

up, and new shoots rapidly spring from its base preparatory to a fresh yield of fruit, which will appear in the course of six months.

The cultivation of this precious tree is accomplished by simply protecting it from injury and turning the soil at its root, while its culinary preparation is achieved by mere boiling, baking, or roasting, although it is susceptible of all the refinements of the French and English cuisine.

It is needless to say that in a colder climate than that of the tropics the Banana would require more care and labor, but still, as far north as the milder portions of Maryland, by protecting it in winter, it could be made to yield fully one-half of its product on the islands of the South Sea, just as the Italian Grape can, with scrupulous attention, be coaxed to grow with a yield diminished at first, indeed, but increasing from year to year in southern Sweden. The half product of the northern Banana would still be more than 65 to 1 as compared with wheat, and 22 to 1 compared with the potato. This, too, is contemplating the article in its commonest sense. Any one familiar with its price as a fruit throughout the Northern States in certain seasons will not need a hint at other sources of much larger or readier profit.

Few things in the vegetable world offer a more majestically ornamental presence in the garden than the Banana tree with its superb foliage, its broad coronals of odor-breathing blossoms, its rich clusters of roseate and golden fruit, and its clean, graceful trunk; and, in contemplating it, the possessor realizes to the utmost a sense of the beautiful combined with the practically useful, since the fibrous part of its stalks and leaves can be manufactured into excellent coarse lin

en and paper, and all its green refuse is fattening fodder for cattle.

There are thousands of acres of alluvial land lying along the water courses of the South that might be studded with this vegetable gold.—*The N. Y. Mercantile Journal*.

HISTORY OF CHOCOLATE.

When Fernando Cortez went to Mexico in search of gold, the first discovery he made was chocolate. This new substance was considered a sort of wicked luxury, at least for monks, who were among the earliest to adopt it, but who were solemnly warned against its supposed peculiar effects.

Chocolate (or, as the Mexicans call it, *chocolatl*), is the popular name for the seeds of the cocoa plant, in a prepared state, generally with sugar and cinnamon. The Mexicans improve the flavor of the inferior sorts of cocoa seeds by burying them in the earth for a month, and allowing them to ferment. The nutritious quality of either cocoa or chocolate is entirely owing to the oil or butter of cocoa which it contains. Cocoa-nibs, the best form of taking this production, are the seeds roughly crushed. When the seed is crushed between rollers, the result is flake cocoa. Common cocoa is the seed reduced to a paste and pressed into cakes. The cheap kinds of chocolate are said to be largely adulterated with lard, and sago, and red lead—a pernicious mixture for healthy stomachs; but what must it be for weak stomachs craving for food at once nutritious and easy of digestion? The “patent” chocolates are nothing more than various modes of preparing the cocoa seeds.

The ladies of Mexico are so excessively fond of chocolate that they not

only take it several times during the day, but they occasionally have it brought to them in church, and during the service. A cup of good chocolate may, indeed, afford the drinker strength and patience to undergo a bad sermon. The bishops opposed it for a time, but they at length closed their eyes to the practice. Spain welcomed the gift of chocolate made her by Mexico with as much enthusiasm as she did that of gold by Peru; the metal she soon squandered, but chocolate is still to be found in abundance in the Peninsula. It is an especial favorite with ladies and monks, and it always appears on occasions when courtesy requires that refreshments should be offered. The Spanish monks sent presents of it to their brethren in French monasteries; and Anne of Austria, on her marriage with Louis XIII. of France, brought a supply of chocolate from Spain, and it henceforth became an established custom.

In the days of the Regency it was far more commonly consumed than coffee, for it was then taken as an agreeable aliment, while coffee was still looked upon as a somewhat strange beverage, but certainly akin to luxury. In the opinion of Linnæus it must have surpassed all other nutritious preparations or that naturalist would hardly have conferred upon it, as he did, the proud name of *theobroma* — “food for the gods.” The favorite drink of the Emperor Napoleon was *choca*, a mixture of coffee (with milk) and chocolate.

Invalids will do well to remember that chocolate made with vanilla is indigestible and injurious to the nerves. Indeed, there are few stomachs at all that can bear chocolate as a daily meal. It is a highly concentrated aliment, and all such cease to act nutritiously if taken into daily use.

THE DIOSPYROS KAKI, OR JAPANESE PERSIMMON.

OUR FRONTISPIECE.

The great interest now being taken in this new and wonderful fruit warrants us in presenting to our readers illustrations of two of the varieties that are considered as especially worthy of attention.

The first, which is called the "Daimio," or, as known in Japan, "Yedo's best Persimmon," is of medium size, slightly oblong; color dark red; flesh soft and sweet; ripens on the tree in October. The second is called the "Nihon." It is not as large as some, but very prolific, and the earliest. It ripens on the tree in September. The flesh is solid. It is also generally oblong, with flat top; the flesh is spotted with black. It is highly prized for its keeping qualities, and the sweetness of its flavor. With but few exceptions, the other varieties are plucked from the tree and ripened in tubs, to remove the astringency. In China this is accomplished by dipping the fruit in hot water, and allowing it to lie for a few days. It is also said that they are sometimes packed in bran to perfect the flavor. This is the case with both the Emong and Hachia, the first of which is known as "Tarugaki," from "taru," a cask or tub. There is no such fruit as is advertised as the "seedless variety." Some specimens are without seeds when the trees are young but the seeds appear in the subsequent crop. There is said to be a small variety in the southern part of the country that is seedless, but it is used principally for drying. One specimen of this variety has fruited at New York city, and it can probably be grown as far north as latitude 40 to 42 degrees. It is found in large quantities in the

vicinity of Pekin, China, where the climate is like that of New York. All seedling trees are late in fruiting, and unreliable.

BEARING ORANGE TREES IN STOCKTON.—The Stockton *Independent* has the annexed: In the garden of John Gross, corner of Centre and Park Streets, there are several Orange trees, heavily laden with fruit. Only one of the trees bore fruit before this year. The weight of the Oranges bend the branches so that the twigs hang down like Weeping Willows. The trees present a beautiful spectacle. The gardener in charge of the grounds informs us that Orange trees can be raised with less difficulty than Peach trees. The fine yield in Mr. Gross', and one or two other gardens in the city, demonstrates the fact that Oranges of good quality can be successfully grown in this locality. It is astonishing that Orange trees are not more extensively planted in this section. As ornamental trees they are unrivalled, their evergreen foliage even surpassing in beauty that of the Laurel.

SIR JOSEPH HOOKER is said to have seen more species of plants than any other botanist. The results of his recent investigation of the flora of the three middle latitudes of this country goes to show that the vegetation resolves itself into three meridional floras, incomparably more diverse than those presented by any similar meridians in the Old World, being, in fact, as far as the trees, shrubs, and many genera of herbaceous plants are concerned, absolutely distinct.

"MANUAL OF THE CULTURE OF SMALL FRUITS," by E. P. Roe, is a brief compendium, giving the author's experience and methods, and is eminently sensible and useful.

THE PLUM.

PLATE COLORED BY THE EDITOR.

Few fruits are more beautiful on the tree or more tempting on the table than Plums. As a dessert they are everywhere in favor, and extensively used as a preserve. Beauty around us adds to the sum of our happiness, and what can be more beautiful than a well-arranged orchard of choice fruit, where, after the fragrant blossoms are gone, we look upon the rich green foliage and watch the slowly developing fruit until it arrives at maturity, presenting us with the choicest of Nature's blessings to man in the form of the golden Apple, the luscious Peach, the rich pale crimson, deep blue, or golden yellow Plum, etc.

Plum trees are hardy and easily cultivated. They are especially suited to the genial climate of California, where seldom, if ever, the dreaded "black wart" appears, and where the curculio never insinuates its disgusting presence. Among the choice varieties of this fruit are the Golden Drop, the Imperial, Green and Purple Gages, the Washington, the Jefferson, and last, though not least by a great deal, the Reine Claude de Bavey, which is a comparatively new and not very common Plum, found illustrated in this issue.

This variety of Plum is as large as the Washington, slightly oval and plump in form, and greenish yellow in color, with stripes and splashes of green, covered with a delicate bloom. In taste it is juicy, melting, sugary, rich and excellent, and separates freely from the stone, which is small. The stem is short and stout, planted in rather a deep cavity, and well calculated to withstand the high summer winds of California. The tree is a vigorous grower, with smooth branches, and large, broad, ovate leaves, with round-

ed, irregular serratures. It is very vigorous and productive, is of foreign origin, and a valuable addition to our earlier varieties grown here. It ripens in our State the last of September, and hangs long on the tree. Its peculiarities, it will be seen, all point to it as a valuable market Plum. It is to be had at all our nurseries of fruits.

REMARKS ON THE ROSE.

Although the mild and genial climate of California is favorable to the blooming of many flowers out of doors all the year round, none have impressed us more with this fact than the Rose, some of the best sorts of which are to be found in bloom in almost every garden here at all seasons. In some warm and sheltered spots, also, in the country on this slope, the Rose is found blooming during what we call our winter, in its native wildness and simplicity. It is true this wild Rose (*Rosa canina*) is confined at this time of the year to such particular and favored spots only, and we may add to this, as we are informed by some of the most eminent traveling botanists, that this acknowledged favorite of France, England, and the United States, the three greatest nations in the world, is to be found in a wild state very generally spread over the earth's surface. As if too beautiful to be excluded from the national flora of any of the ancient divisions of the world, it graces alike various countries of Asia, Africa, and the most northern parts of the American continent, and extends over the whole of Europe.

It is a remarkable fact, that Australia has naturally no Roses; and none have yet been found very near to, or south of the equator. It is in the temperate regions of Asia and throughout Europe generally that those species abound,

from which nearly the whole of the present garden varieties have sprung. If we extend our view, as derived from the information of botanists, we find some growing on the mountains of North America, whose tops are covered with eternal snow; and others in the dreary wilds of Greenland, Kamschatka, and Iceland; while in Siberia there are several interesting species. On the other hand, if we turn to warmer climates, we discover that Mexico, Abyssinia, Persia, India, and Egypt have their Roses, and even on the outskirts of the mighty Sahara (now much diminished in reputed extent, however, by the discoveries of Stanley), one species is found, gladdening the approaches to the desert with its clusters of white flowers (similar to our Queen of the Prairies), though doubtless often

—“Born to blush unseen,
And waste its sweetness on the desert air.”

We seem to be in the dark as to who were the first people to bring this queen of flowers from its natural habitats, to be a dweller in our cultivated grounds. Probably it was, at any rate, at a very early period, and it has a claim to our regard as well for its antiquity as for its beauty, variety, and fragrance. Cicero, Ovid, and Martial speak of Roses; and Pliny, who wrote on gardening toward the close of the first century, devotes some considerable space to them. It is certain that they were very precious favorites with the Romans. Cleopatra spent a talent in their purchase in feasting Marc Antony. Charlemagne, in the ninth century, was very fond of them in his gardens. In Holland the Rose seems to have made but little progress, although it was from that country the most beautiful of its tribe, the Moss Rose, was first introduced, from whence it found its way to France. The Tulip, the Hyacinth,

the Ranunculus, the Anemone, were the flowers of Holland, and this made them popular in other European countries. Thus the Rose was neglected in the seventeenth and eighteenth centuries. Its capabilities of improvement were not thought of, or unknown. The unlocking of its treasures was reserved for more recent times. The skillful and persevering individuals to whose labors we are indebted for the choicest ornaments of the Rose garden still live to admire the production of their genius, and to witness their favorite flower reigning without a rival in the floral world. The Gladiolus and the Pansy, with many other flowers, are very brilliant, beautiful, and varied, but they lack what the Rose possesses in addition to these qualities—fragrance.

RHAMNUS (FRANGULA) CALIFORNICA.

Among the many valuable and interesting reports, papers, and experiments by E. W. Hilgard, Professor in the University of California, and of the Colleges of Agriculture and Mechanic Arts, is the examination of the so-called California Coffee, the seeds of *Rhamnus* (*Frangula*) *Californica*. The seeds of this California Buckthorn have for several years past been spoken of as a possible substitute for true Coffee, and some persons have strongly insisted upon its intrinsic excellence. The following examination was undertaken with a view to determine whether or not the idea had any good foundation in fact. The shrub seems to be especially abundant in the foothills of the Sierra Nevada, and the berries received from that region are a good deal larger than the fruit usually becomes in the canyons of the Coast Range. The seeds, also, are larger and more plump. The berry may be said to vary from the size of a small cherry to that of a pea;

when ripe it is bluish black, with a soft purplish pulp inside, inclosing two seeds resembling grape kernels much more than grains of Coffee, but placed, like the latter, facing each other with their flat sides. It is this superficial similarity which doubtless led to the thought that the plant was related to the true Coffee tree. But, unlike the Coffee seed, these grains consist of a thin husk with a soft kernel inside, which readily mashes between the fingers, and is very palpably oily in its nature, quite unlike the horny texture of all Coffee.

Several small samples were received from different parties, but one of several pounds, sufficient for a full examination, was supplied by Mr. S. B. Hitchcock, through the *Rural Press* office. According to his account, the trouble and difficulty of gathering alone would make the product a very costly one.

A small lot of berries, pulped and the seeds washed out, yielded $22\frac{1}{2}$ per cent. of the dried seeds.

Half a pound of seed was carefully parched, in a drum parcher, to a chestnut brown tint. No aroma resembling that of Coffee was perceived at any stage of the process; but toward the end a very lively evolution of a white smoke took place, with an unequivocal stinging odor of frying grease. The seed so treated had lost a little over 9 per cent. in weight, and had shrunk $8\frac{1}{2}$ per cent. in bulk. True Coffee, under the same circumstances, would have lost 18 per cent. in weight, and would have increased from 35 to 50 per cent. in bulk.

The infusion of the roasted seeds resembled in taste that prepared, during the late war, from roasted peanuts.

The seed kernel, pressed on paper with the finger, at once produces a grease spot. On extraction with sol-

vents, it yields 32 per cent. of a dark-colored oil, of a faintly aromatic taste, and non-drying. True Coffee yields, at most, 10 per cent. of fat.

On burning, the Buckthorn seed leaves 25 per cent. of ash, of which about one-fifth is soluble in water. True Coffee contains between 6 and 7 per cent. of ash, which is very largely soluble in water, and adds materially to the nutritive qualities of the beverage. True Coffee contains about 4 per cent. of tannin. The Buckthorn seed contains not a trace of that substance.

After the extraction of the oil from the raw seed alcohol extracts about 8, and thereafter water about 9 per cent. of soluble matter. Among these soluble matters is an interesting substance which, while colorless at first, soon absorbs oxygen from the air, and is thereby converted partly into a dark substance nearly insoluble in water and alcohol, partly into a coloring matter (doubtless the same as that contained in the pulp), which dissolves in ammonia water with a beautiful purple tint, and imparts to cotton fibre, without any mordant, a handsome maroon color, which seems to be quite fast. Were the material more available, it would doubtless come into use as a dye stuff, as is already the case with several other members of the Buckthorn tribe.

The Buckthorn seed is thus shown to differ from Coffee in its chemical properties as much as it does botanically; the only point of resemblance being that both of the fruits are two-seeded berries.

THE British Consul-General for Algeria, in writing of the Eucalyptus, indorses all that has been said about the utility of the tree in destroying miasma, draining marshes, and acting as a febrifuge.

PUBLICATIONS RECEIVED.

"Vick's Illustrated Catalogue and Floral Guide," for 1878, Rochester, N. Y. This, with "The Flower and Vegetable Garden," by the same most industrious and competent authority, we will remark in his own words, which we fully indorse: "Furnish all the information necessary to make a successful gardener of any one who will read, and practice what he learns, but questions must, of course, continually arise that can not be anticipated or answered in a book." We have before commented upon the author's new work—Vick's "Illustrated Monthly Magazine"—in words of high praise, but we believe not more so than this useful and interesting addition to the writer's valuable publications merits.

"The Illustrated Annual Register of Rural Affairs and Cultivator's Almanac for 1878," with 135 handsome wood engravings, Albany, N. Y.; published by Luther Tucker & Son, and prepared by J. J. Thomas, Editor of the "Cultivator and Country Gentleman." This is No. 24 of this most valuable and useful work, beautifully printed and illustrated, and the whole numbers forming a volume of knowledge on agriculture and horticulture rarely, if ever, equaled by any other standard work on these subjects.

"Spring and Fall Editions of the Rose Grower's Companion and Floral Guide for 1877-8," by A. K. Williams, Cascade Rose Nursery and Greenhouses, Richmond, Indiana. Published semi-annually. All the European novelties in Roses are continually imported.

"Landreth's Rural Register and Almanac for 1878." Published annually for gratuitous distribution; Philadelphia.

"The Family Health Annual," in which there are sanitary hints for each month; Oakland, Cal., 1878.

"Wholesale Catalogue of Select Flower Seeds," August Rolker & Sons, 44 Dey Street, N. Y., January, 1878.

University of California, Berkeley: "Reports to the President of the University, from the Colleges of Agriculture and the Mechanic Arts," by Professor E. W. Hilgard, F. G. Hesse, G. F. Becker, S. B. Christy, and Frank Soulé, Jr. Professor Hilgard's Report on Soils, etc., is very instructive and elaborate.

"The Poultry World," for the fancier, family, and market poulterer, devoted exclusively to poultry. H. H. Stoddard, Hartford, Conn., Dec. 1877.

"Californian Pictures," in prose and verse, by Benjamin Parke Avery, for sale at Roman's, S. F., 1878. The papers comprised in this delightful collection, prepared by one of California's best and most cultivated sons, cut off, alas, too soon in his usefulness, are especially valuable and interesting to those who are admirers of the many grand, varied, and beautiful scenic features of our naturally highly favored State, connected also with descriptions of its often peculiar flora, so attractive to lovers of fruits, flowers, and general vegetable life; as well as of the fauna, including notices of the different species of animals inhabiting our coast. Some of these excellent articles were published in the *Overland Monthly*, whose departure from existence here was a sad retrograde movement in the literary, scientific, and æsthetic progress of California. Many of the pictures of scenery of our slope given by our author are very glowingly and truthfully portrayed, and furnish strangers or visitors to our State a capital

idea of some of the salient characteristics of our scenery. As an instance, the writer says, in speaking of our valley between the Sierras and Coast Range: "The climate of this fertile basin is very warm in summer, and favorable to the out-door growth of Roses and Strawberries in winter. It is timbered at intervals with open parks of Oaks, which become more numerous near the foot-hills on either side, and there mix with inferior coniferæ and minor vegetable forms, including the characteristic Manzanita, Buckeye, and Laurel. The principal rivers are fringed with Sycamore, Oak, Cottonwood, Willow, Alder, and White Maple. Sweet Briars bloom close to the streams, and where the timber has not been cut away, the wild Grape vine still hangs its graceful curtains, through which the boatman catches glimpses of beautiful woodland or valley scenes. Immense tracts are annually covered with a luxuriant growth of wild Oats, which, alternately green or gold, according to the season, rolls its surface in rippling light and shade under every breeze. In the spring, the whole surface of the valleys, where not cultivated, is thickly covered with wild flowers of every color; and the scene of this gay parterre, broken with seas of verdant green, and bounded by walls of blue or purple mountains, whose peaks are capped with snow, is quite entrancing. These charming plains were the favorite resort of the aborigines, who found in the streams that drain them plenty of salmon, sturgeon, and lesser fish, and all over their extent herds of antelope and elk, and myriads of ducks and geese, besides quail, doves, hares, rabbits, and squirrels. The grizzly would sometimes come from the hills to eat fish and berries; but he was game beyond the skill of the simple savages

who once enjoyed the central valley alone." In speaking of the coast valleys, the author says: "Although the open coast valleys are subject to the winds and fogs, they possess a fine climate, and are cultivated to the very margin of the sea. It is a beautiful sight to behold their grassy margins skirting the crescent lines of small bays, or their wide fields of yellow grain contrasting with the blue line of the ocean, while behind rise the rumpled velvet of bare hills, tawny or verdant, with the season, and the farther crests of cloud-girt summits bristling with redwood forests that keep moist in the salty air. Perhaps the most picturesque valley that opens to the sea is Russian River Valley, north of San Francisco. It is long and narrow, has a generally level but sometimes rolling surface, is traversed by a clear stream, and bounded on either hand by ridges, which have a great variety of form. Its groves of Oak, its picturesque knolls, its vistas of conical peaks, its winding stream, alternately placid and rapid, its luxuriant carpet of grass, grain, and flowers, have long made it a favorite sketching resort for artists." [A late visit has impressed us with the truth of this narrator as to the Russian River Valley, and the ride on the new road from Cloverdale to Ukiah by the side of this lovely river was especially delightful from the romantic and picturesque beauty of the scenery.—ED.] The author thus describes the inner series of Coast Range valleys: "They are the favorite nestling places of our population, as they were the favorite sites of the Mission Fathers, and offer samples of the most elaborate cultivation, the most contentment, and the greatest thrift. Seldom more than three or four miles wide, often not more than one, they are in length from five to fif-

ty. Then gently rolling surfaces rise in mound-like hills on either side—the best soil for the Wine Grape—which in turn are flanked by ridges or peaks from 500 to perhaps 3,000 feet high. The creeks with their dark green belts of timber, often Live-Oak, wind through continuous harvest-fields. Many of the farm-houses are prettily built on knolls that command a good view. Nothing can be finer than the aspect of many of these valleys, when the lush verdure of the early spring is prodigally gemmed with wild blossoms of the most brilliant colors, or when the rich gold of their summer fields, islanded with the clumps of evergreen Oaks, is contrasted with the purple or blue mountains, and the sky at morning or evening brightens or fades through tints of amber or amethyst. Sometimes the splendor of the setting sun seems to penetrate the dark substance of the solid hills, and gives them a transparent glow, as if they yet burned with the heat of their thrusting up. As light comes in the spring and summer, the trees are vocal with linnets, while larks sing in the fields, and chanticleer sounds his horn. As day goes, it is pleasing to hear the birds calling to repose, the wild doves cooing, the quails fondly signaling their mates, the owl adding his solemn note to the vespers of the feathered tribe.”

The chief papers are Mountain, Lake, and Valley, Up the Western Slope, On the Summit, Head-waters of the Sacramento, Ascent of Mount Shasta, The Geysers, Golden Gate Park, City Scenery, Santa Cruz Mountains, The First People, The Trinity Diamond, and Old and New.

“The Sun Worshipers of Asia,” by Chas. D. Poston. For sale by Roman & Co., San Francisco, 1877. This is an extremely interesting work, giving an eloquent history of the Parsees, or

sun-worshipers of Persia, the followers of the ancient Zoroaster, the teacher of the religion of the Magi. According to the best and oldest authors, he lived 6,000 years B. C. The principles of this religion were, purity of thought, purity of speech, and purity of action. These followers of Zoroaster believed in “the God who created the heavens, the earth, etc.” When the last conquest of Persia was made by the Turks, these Parsees were scattered over Asia, and a large portion of them have settled in Bombay, where they have some fifty commercial houses. They are a most respectable race of people. The most eminent of them was Sir Jamsetjee Jeejeeboy, who was made a baronet by the Queen of England for his many acts of benevolence and charity. They claim the ancient order of Freemasonry, and have Masonic lodges in Bombay, and are received in fellowship by the lodges in England and France. They have poets among them. The following of their lines may be quoted :

“Sweet maid, if thou wouldst charm my sight,
And bid these arms thy neck infold,
That rosy cheek, that lily hand,
Would give thy poet more delight,
Than all Bokhara’s vaulted gold,
Than all the gems of Samarcand.”

An old man says :

“The snows of age descend upon my head,
Yet from my gaiety of disposition I am young.”

Their heaviest curse in poetry seems to be :

“May you milk forty cows,
And have no buttermilk
To quench your thirst.”

There is a remnant of this tribe still in Persia, in the valley of Shiraz, which is “loaded with the golden grain of a luxuriant harvest; it is bright with fertilizing streams and the play of waterfalls and fountains. The atmosphere is cooled with refreshing showers and perfumed by the fragrance of flowers.

The highways are shaded by fruit trees, which furnish the traveler with the most luscious Apples, Peaches, Grapes, Figs, Oranges, Dates, and Pomegranates. At eventide the turtle doves coo in the Cypress groves, and the nightingale pours his liquid note of love into the ear of his blushing mistress, the Rose." These Parsees appear to be worthy of a higher place in our estimation than as mere idolaters of the sun; they are followers of a pure and sublime religion which deserves respect for its vast antiquity, and for the persecutions it has survived. Appended to this most delightful small book is a very pleasant and most attractive description of the Ruins of Persepolis in Persia—once the halls and palaces of Cyrus or Cambyses, Darius, Xerxes, and Artaxerxes Ochus.

FRUIT CULTIVATION AND REPORT OF FRUIT AND VEGETABLE MARKET.

Apples are, beyond question, the most important section of our cultivated fruits; the vast number of varieties (although a great many sorts are not recommended for either market or home use), and their different characters afford scope for selections suitable for farms and gardens of every size; the only difficulty arising from the claims of so many really good kinds. (See the list of the kinds adapted for California in another portion of the present number, page 9). The productiveness of an orchard, or even a single Apple tree depends on two considerations, namely, aspect and soil. The first is not of so much importance on this coast as in the East or in Europe, the main point here being shelter, which will depend much upon the situation of the land and the strength of the most prevalent winds. Ours is a windy country generally, and it is

therefore desirable in most cases to plant some kinds of trees, either deciduous or evergreen, as a shelter where there is no natural one. This, of course, should be done on the side from which there are the most prevailing winds. A gentle declivity is a very desirable location for orchards. As to the soil, too much trouble can hardly be taken in having both the surface and under-stratum properly prepared, and their natural deficiencies corrected. Work of this nature can not be done after the trees have attained a size, so well as before they are planted; the surface soil should be strong yet friable loam, in depth not less than a foot and a half to two feet, better if resting on a bed of porous material, whether gravel or other stones, but, at any rate, plow deep, narrow furrows and cross plow, and harrow so thoroughly as to pulverize the whole soil together. Planting on this slope should be performed after some of our earliest rains, not later than February, if possible. As the trees are brought on the ground, the shoots which form the head should be thinned and regulated by taking off the ends of the strongest in those places where an increase of branches is desirable; the roots should also be carefully examined, shortening the points and removing all bruised or injured parts. In planting, care should be taken to spread them out equally on all sides of the tree that it may have an equal support against winds from every quarter; the depth at which they are placed should not exceed eight inches from the surface, or just sufficient to effectually cover them. Standard trees in an orchard should not stand higher than about thirty to forty feet from each other, according to the wide or narrow character of the growth of the different kinds, the space

between being filled with Currant or other low growing plants. Cattle must be carefully excluded from the young trees for some years, or means taken to prevent their browsing upon the bark of the stem or young branches, which they are certain to do, if at all possible, to the irreparable injury of the trees in most cases; horses and rabbits are equally mischievous in places where they abound. A correspondent of the *Western Rural* says: "I have used various remedies to prevent rabbits gnawing fruit trees, and the best is the following: Take soft soap and sulphur—not particular as to proportions, so there is enough soap to incorporate the sulphur, so that every part of the mass will readily adhere to the trees. This does not so readily wash off as soap alone, and the sulphur is probably more repulsive than any other cheap and convenient article." Or these pests may be deterred by binding the stems of the trees round with chemical to a height above the animals' reach.

The pruning and training of standards is confined to the removal of superfluous branches; crowded shoots, or those which cross each other, together with weak or unhealthy ones, should be taken out at each annual pruning, which may be done any time between the fall of the leaf and the middle of the following March; in cutting for this purpose, as the object is the entire removal of the branches, it is best to cut close to the origin, but it may happen with young trees, or recent grafts, that an increase of the branches is desired; in this case, instead of cutting completely away as before recommended, about half the length of the shoot should be left, and from the greater number of its buds will proceed new branches in the succeeding season.

New varieties of Apples, as of nearly

all other vegetable forms, are obtained from seeds. New kinds, to be worth preserving, must possess some very decidedly superior qualities, for there are now nearly twelve hundred distinct kinds which may be regarded as worth cultivating in different localities or parts of the world for some purpose or other, independent of others decidedly valueless.

The propagation of Apples is usually effected by grafting the desired kind upon a "stock," or seedling plant, of the required size and proportionate vigor to the sort it is intended to bear. We need not enter here into this process, as it is quite generally well understood.

A practical and intelligent contemporary—the *California Agriculturist and Artisan*—says: "On many places a park and orchard may be laid out together, so as to be an ornament as well as profit to the farm. As every farm should have its grove of timber and fuel trees, as well as its family orchard, it will be no more expensive to arrange the whole together than to have them separate. Only be sure to give the fruit trees sufficient distance from the forest trees. We would suggest laying out the grounds as for an orchard alone, and then checking off in squares here and there for several groups of forest trees. In the intervening spaces plant the fruit trees. The forest trees in variety could be closely planted in clusters. The fruit trees should occupy regular places at sufficient distances from and between these clusters of forest trees. With sheltering belt and a winding avenue through the grounds, the farmer in moderate circumstances could have a place in a few years' time that a rich lord might envy, and the investment in fruit and forest trees would be paying and economical besides."

With regard to the markets: The supply of Grapes has become less and less. We find the Tokay, so well ripened now as it is, about the sweetest and juiciest Grape on the stalls. That standard and correct authority—the *Commercial Herald*—states that Col. W. Hollister was in town about the middle of last month (December), from his extensive ranch and orchards at Hollister, bringing with him beautiful specimens of Persimmons of a rich golden hue. The fruit was perfect. Col. Hollister has a hundred trees or more of this fruit on his place, and some few now bearing 100 Persimmons each. The soil and climate seem to be perfectly well adapted to its growth. Mr. Loomis, at Trumbull's, is introducing the Japanese Persimmon quite extensively, and in a few years this delicious fruit will be very plentiful on this coast. California Oranges of the new crop were arriving here, and promise to be both good and abundant during the season. Our local canners were fully supplied with assorted fruits, sauces, etc. Lady Apples were in good quantity to supply the Christmas trade. Los Angeles Oranges and Limes were dull in sale, owing to the large supply of Mexican in market.

The stock of Zante Currants, Hungarian Prunes, etc., is running light, the latter in hhds. quotable at 11c. to 11½c. Figs of the new crop are now arriving via New York, finding a good market. Mexican Oranges are in good supply and of choice quality. The stock of Malaga Raisins is light for the season, yet less than usual are required by reason of the superior quality of the native fruit. Blower's Muscatel Layers may be quoted at \$2.75 for whole, and \$3.25 for halves; Briggs' Raisins, \$2.25 to \$2.50. There are many other brands in market, but the quality is very vari-

able. On the whole, California Raisins, though less in quantity, are much better in quality than last year.

About the 4th of this month (January), New Potatoes were added to the list of vegetables in market, although they are at present very "small Potatoes." New Green Peas from Warm Springs made their appearance, but brought a rather high figure. A few Grapes and Strawberries were on the stands, but with slight demand for them, and only now and then there is an arrival of boxes of these fruits. We observe a few of the common Eastern Persimmons, and the late sharp white frosts have put them in a pleasant eatable condition. There are also some Medlars (*Mespilus*), most of them soft and agreeable to the palate of those who have been used to them in the "old country." Their flavor is very peculiar, and much liked by those who have been educated to it. Oregon Apples arrived in large quantities, but did not command a good price in consequence of there being an abundance of that fruit in market, and for which small prices were obtained, and the trade in which was rather dull. Los Angeles Oranges, Lemons, and Limes were in good supply. California Raisins are good and plentiful notwithstanding the receipts of Malaga Raisins have been very liberal of late, and with which many boxes of the former bear a fair comparison with the latter. We are indebted to Howe & Hall for the following quotations: Apples—Choice, \$1 to \$1.75 per box; common, 50c. to \$1 per box. Pears—Winter Nelis, \$1.25 to \$1.75 per box; E. Beurre, 65c. to \$1 per box; Vicar, 75c. per box. Cranberries, \$12.50 to \$13 per barrel. Oranges—Cal., \$12.50 to \$35 per M. Lemons—Sicily, \$10 to \$12.50 per box; Los Angeles do, \$10 to \$15 per M.

Limes, dull. Bananas, \$2.50 to \$5 per bunch. Pine Apples, \$8 to \$10 per doz. Cocoanuts, \$7 to \$8 per 100. Grapes—Muscats, \$1.25 to \$1.50 per box; Black Morocco, \$1 to \$1.50 per box; Native, 50c. to \$1 per box; Cornichon, \$2.50 to \$3 per box. Dried Fruit—Apples, 4c. to 6c. per lb.; Peaches, 7½c. to 9c. per lb.; Pears, 4c. to 8c. per lb.; Plums, 3c. to 4c. per lb.; pitted, 12½c. to 15c. per lb.; Prunes, 12½c. to 15c. per lb.; Figs, white, 6c. to 8c. per lb.; black, 4c. to 6c. per lb.; Cal. Raisins, \$1 to \$2 per box; \$1.25 to \$2.25 per hf box; \$1.50 to \$2.50 per qr box. Vegetables—Cabbages, 87½c. to \$1.12½ per ctl.; Tomatoes, 60c. per box; Marrow-fat Squash, \$6 to \$10 per ton; Green Peas, 10c. to 12½c. per lb.; String Beans, 10c. to 12½c. per lb.; Garlic, 1c. per lb.; Cauliflower, 75c. to \$1 per dozen; Okra, dry, 12½c. to 15c. per lb.

A CHICORY MANUFACTORY AT STOCKTON.—Last Monday 200 barrels of Chicory were shipped on the steamer Alice from the San Joaquin Chicory Mills to San Francisco. There will be 800 barrels manufactured at this establishment this year from the crop produced on fifty acres of land. The proprietors of these mills are the pioneers in the business in this State, and understand it thoroughly, having had much experience in other countries. It is their intention to launch out on a much larger scale next year. Since the first inception of the business they have never for a moment entertained an idea of abandoning their enterprise, reports to the contrary notwithstanding. The manufactory of Chicory promises to become an extensive and flourishing business in San Joaquin Co.—*Stockton Independent, Dec. 5th.*

RAPID GROWTH OF EUCALYPTUS.—The rapid growth of the Eucalyptus is won-

derful. Anson Goodspeed has on his lot in north Healdsburg some trees which have grown 40 feet in two years, and others 22 feet in eighteen months. The latter were set out one year ago last March.—*Russian River Flag.*

STRAWBERRY culture is included in Fuller's "Small Fruit Culturist," and he has besides a special work, "The Illustrated Strawberry Culturist." Merrick's "Strawberry Culture" is another special and useful work, giving New England methods.

WORKS on the Grape vine are the most numerous: "The Grape Culturist," by A. S. Fuller; "Mohr on the Grape Vine," Chorlton's "Grape Grower's Guide," and "My Vineyard at Lakeview," are the leading works.

METEOROLOGICAL RECORD,

FOR THE MONTH ENDING DECEMBER 31st, 1877.

(Prepared for THE HORTICULTURIST by THOS. TENNENT, Mathematical Instrument and Chronometer-maker, No. 18 Market Street.)

BAROMETER.

Mean height at 9 A. M.	30.11 in.
do 12 M.	30.11
do 3 P. M.	30.11
do 6 P. M.	30.10
Highest point on the 5th at 3 P. M.	30.34
Lowest point on the 23d at 6 P. M.	29.80

THERMOMETER.

(With north exposure and free from reflected heat.)

Mean height at 9 A. M.	53°
do 12 M.	58°
do 3 P. M.	58°
do 6 P. M.	53°
Highest point on the 14th at 12 M.	66°
Lowest point on the 30th at 9 A. M.	46°

SELF-REGISTERING THERMOMETER.

Mean height during the night	44°
Highest point at sunrise on the 15th	51°
Lowest point at sunrise on the 31st	37°

WINDS.

South-east and south-west on 14 days; north and north-east on 4 days; west on 3 days.

WEATHER.

Clear on 10 days; cloudy on 15 days; variable on 6 days.

RAIN GAUGE.

	Inches.
1st	0.19
16th	0.10
17th	0.96
18th	0.06
21st	0.27
23d	0.48
28th	0.31

Total	2.37
Previously reported	1.96
Total for the season	4.33

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LIST OF

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Frequent application for information about the *NURSERYMEN FLORISTS, AND SEEDSMEN* in San Francisco has induced us to furnish the following list, which we will add to and correct from time to time :

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 BARBEE, JOHN (Laurel Hill), north side Bush, between Lyon and Baker Streets.
 BROCC, ALFRED V. (Bay View), southeast corner Twelfth Avenue and J Street.
 COLLIE & STEWART, 18 Post Street.
 DOYLE, LUKE, southeast corner Pine Street and Central Avenue.
 GAUBERT, JOSEPH (South San Francisco Nursery), 619 Sacramento Street.
 HARPER, JOHN, east side Folsom, between Nineteenth and Twentieth Streets.
 IOCHNER, MAX, northeast corner Turk Street and Van Ness Avenue.
 LEONARD, JAMES H., southwest corner Valencia and Quinn Streets.
 LUDEMANN, FREDERICK (Pacific Nursery), Baker, between Lombard and Chestnut Streets.
 MEHERIN, THOMAS, 516 Battery Street.
 MEYER, E. (Eureka Nursery), 27 Geary Street.
 MILLER, SIEVERS & CO. (Exotic Gardens), south side Mission, between Erie and Thirteenth Streets.
 NEELY, DAVID, northeast corner Folsom and Twentieth Streets.
 PATTERSON, WILLIAM (Golden Acre Nursery), San Bruno Road, near Twenty-ninth Street.
 POUYALLET, CHARLES (California Nursery), corner of Harrison and Twentieth Streets.
 ROBERTSON, WILLIAM, 2312 Folsom Street.
 ROEMER, A. P., east side San Jose Road, near Six-mile House.
 SCHO, CHARLES, west side San Jose Road, near West End House.
 SOUTH SAN FRANCISCO NURSERY, 619 Sacramento Street.

FLORISTS.

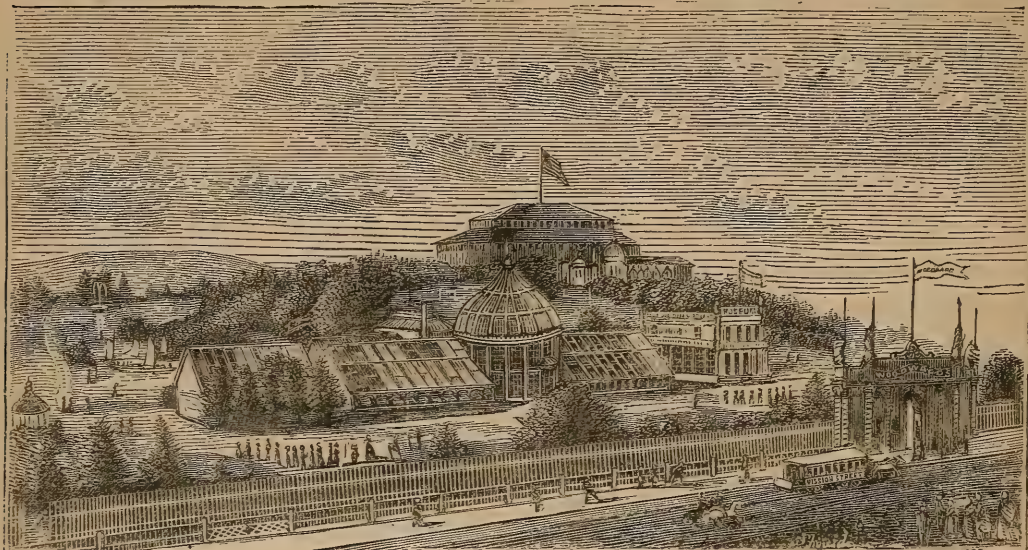
APPLEBY, WILLIAM, south side Mission, between Nineteenth and Twentieth Streets.
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 AURIGNAC, MARCELIN, front of Lick House.

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1887 ANT

THE

California Horticulturist

AND FLORAL MAGAZINE.

E. J. HOOPER, Editor.

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THE CALIFORNIA HORTICULTURIST

..... AND

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THE GREAT BIGARREAU OF MEZEL CHERRY.

THE
California Horticulturist

AND FLORAL MAGAZINE.

VOL. VIII. SAN FRANCISCO, FEBRUARY, 1878. No. 2.

A PERFECT PLANT.

BY W. C. L. DREW.

If there is a plant of greater perfection than any others of the floral kingdom, that plant is the Stock. A fine, healthy foliage, without which no plant can be superior, blossoms of every conceivable delicate and desirable hue, of the finest form and most delightful fragrance, produced in the most lavish abundance, and with a habit and form of plant unsurpassed, it lacks none of the requisites of a perfect plant.

In California the Stock grows most luxuriantly, blooming when the July sun beams hottest, and when December rains fall freest, it should occupy a prominent position in every garden throughout the length and breadth of this glorious State. In some localities there are a few specimens of the family in the gardens, but they are of the single and ancient sorts. Why will our people with floral tastes be content to grow such plants when they can, with very little extra care, have a plant perfect in all its parts? Why will our amateurs, whom God has given a climate in which the floral kingdom produces wonders, content themselves with

such, and let the amateurs of the East revel in plants an hundred fold superior? To grow a superior plant costs no more than to grow a poor, miserable, and straggling specimen. To have extra plants it is not necessary to pay ransom sums to florists—the finest of the Stocks can be easily propagated from seed.

A word in regard to the seed will not be out of the way. The finest seed always is very scarce and hard to procure, therefore unprincipled seedsmen palm off an inferior article at low rates. Buy your seed of a well-known firm—such, for instance, as Jas. Fleming, of New York City, who sends out a superior Stock seed—pay a reasonable value for the seed. Never buy a cheap packet, or your labor will be unrewarded. The best seeds are not so high but what they are within the reach of all. Always buy the finest German seed as the surest means of insuring double flowers. Greater skill and a superior climate have enabled the Germans to excel all other countries in producing this seed.

In propagating by seed in California prepare a seed bed in a sheltered place in March; the soil should be well pul-

verized, and of such a nature that it will not bake every time it is watered. After leveling the surface sow the seed in rows three inches apart, sowing the seed thinly; the soil should have been previously moistened. After sowing lay paper or cloth over the surface of the soil, to prevent it drying too rapidly. The seed will germinate in from three to six days, when the covering must be removed. Keep the soil always moist. When the plants have five or six leaves transplant to the position they are to occupy in the flower garden; transplant on a cloudy day; set tall-growing varieties fourteen inches apart, and dwarf varieties nine inches; place a handful of well decayed manure at the root of each when planting out.

Florists in propagating by slips take young shoots splintered or heeled off, these they plant in frames filled with equal parts of fine sand, light loam, and well-decayed manure or leaf mold; the frames are covered with a hand-glass or set in a cold frame, which is kept close until the slips have rooted. Propagating by slips is usually done in May; in California it can be done with a little care any time from October to June.

When the slips have struck roots, they are set out in nursery rows, or planted in their permanent situations. In propagating by slips only the very finest double specimens are used, and where it is necessary to have them true to color. Plants from slips are generally more dwarf than seedlings. The Stock family, belonging to the natural order Crucifere, includes the Ten-week Stock or *Mathiola annua*, the Brompton Stock or *Mathiola incana*, the Intermediate Stock or *Mathiola autumnalis*, also *Mathiola tricuspidata* and *M. bicornis*—both known as night-scented

Stock. The well-known Wallflower or *Cheiranthus Cheiri* is one of the oldest and most popular of the Stocks.

The Ten-Weeks include all the new popular German sorts, such as Scarlet Bouquet, Wallflower-leaved, Miniature, Royal Gem, Blood Red, and all those magnificent dwarf varieties which bloom during the summer, and without which no garden is perfect. The Intermediate, if sown in July or August, will flower early in spring, or sown in March they flower in autumn. As representatives it is only necessary to mention the very fine strains—East Lothian, New Giant, and German Imperial; they grow taller and bloom longer than Ten-Weeks. The Bromptons flower in winter—Salter's Scarlet, Queen, and the new White Beauty are the finest strains. The night-scented are hardly worth a back corner. Do not invest in them.

The new Wallflowers are gems—Double Blood Red, Tom Thumb, Golden, Harbinger, and German Prize are not equaled by any flowers in cultivation, and should be in all gardens. By a judicious selection of two or more strains of each class, a perpetual feast of Stock flowers may be had. To the cut-flower trade the Stock family is without price—there are no finer bouquets made than with the various Stocks.

PECULIAR DRAWBACKS OF CALIFORNIA FARMING.

BY CHAS. H. SHINN, AT NILES.

A few years ago it became the fashion for imaginative Eastern writers to glorify our climate, our prospects, our productions, and all our possessions, real and ideal. Literary people, from Charles Nordhoff to Miss Cone, who expected to pay their traveling expenses by a successful book, rambled over

our sunny slopes, explored our wild ravines, and, in numerous volumes of well-arranged rhetoric, dilated upon our many advantages. Now, although it was very pleasant for the California farmer to be told that he resides in a paradise unknown to his Eastern brethren, yet the doctrine is unsound, for we have peculiar drawbacks as well as peculiar advantages.

The first great difficulty with which we contend is the limited market for perishable produce. We are growing somewhat past this condition, but the crops which are a staple in the East are yet too much liable to become a drug in our easily glutted markets. Wherever manufacturing and commercial interests build up large towns, the raising of fruit and vegetables will soon greatly develop, adding much more to our wealth than could unlimited wheat raising. San Francisco has been the only market worthy of the name; Alameda County could supply her with vegetables, and Sacramento County with fruit. When we then consider the vast acreage now too valuable for wheat culture, we need not wonder that fruit and vegetable culture have so often paid but poorly.

If, as all earnest men hope, our era of wheat-growing and large farms is to change into an era of diversified interests and small, healthy farms, worked by their owners, we must open wider markets for our produce, we must put more of our fruit and vegetables into the form of pork and beef for export, we must can, and dry, and experiment, until complete success is attained. The manufacture of syrups, wines, sugars, and various extracts, is yet in its infancy; and our Mexican, South American, and Asiatic markets will doubtless increase.

But another trouble arises from a

limited market. That which narrows the sale of staple articles must of necessity almost annihilate certain small industries. In other words, there are various productions, separately small, but in the aggregate large, which find no steady or safe sale in any but the very largest markets. In the East a farmer can make a profitable business of raising articles here unsalable in quantity. A man on Long Island made a fortune from the growth of garden herbs by the ton—here a few hundred weight would overstock the market. Horseradish is there grown by the hundred acres. Whole farms are devoted to flower-seed, and I can hardly imagine a more beautiful sight than an acre of *Portulaca*, *Balsam*, *Aster*, *Larkspur*, *Salpiglossis*, *Petunia*, and those old favorites. The business is very profitable, too, but there is no sale for California grown flower-seed.

These drawbacks Time, that friend of humanity, will remedy. But what can we do with the unfortunate fact that many of our farmers follow their business in a speculative way? Too many of us retain, in these latter days, the "hit or miss" theory of mining times. Though we have found some crop at which we can live, and are doing well in a quiet way, we rush to any new diggings which promise to pan out better—and we are gloriously deceived.

The old files of our agricultural journals are full of promising things which at first loudly trumpeted, were soon consigned to oblivion, and only live in the memories of the too-confiding few. We had a *Morus multicaulis* fever, when California was to be the silk emporium of the world; but we know now that it is an industry of slow growth, which must chiefly be carried on by women and children in their own homes. Ramie was once announced as

a new textile of fabulous value, and the picture of an honest farmer, hoe in hand, gazing in admiration upon an immense plant, became a daily vision. Ramie grew; the plants were sold; but there was no market for the raw material, and by mutual consent Ramie has been dropped from the columns of every journal on this coast. Not long ago the so-called native Coffee (*Rhamnus frangula*), took its turn in public favor, but its reign was short and sorrowful, though long enough to deceive some who ought to have known better.

The real truth is that farming is a business of small but certain profits which only in a long series of years will compare favorably with other pursuits. The farmers who get their rotation to suit them, and then follow it up, high prices or low, are the successful ones. The farmers who plant what they wished they had the year before, and feverishly study chances all summer, are usually wrong. Because Broom Corn is high this winter I suppose everybody will plant it, come to grief, and determine never to touch anything but Wheat again. But for all that, the man who raises Broom Corn year after year had better keep on without any fear, for in the long run he will be justified.

Last of all comes our unsteady rainfall, and our dangers of drought. The problem of a State system of irrigation is an immense one, but sooner or later we must grapple it. All the earlier training of our pioneer days, of mountain streams turned aside by thousands of brawny hands, of mighty flumes, and crumbling walls of clay—all this will help us. The bearded men, yet strong among us, who founded El Dorado, toiled on the Yuba and American, built Shasta, and traced the Trinity, will help us to develop the most

wonderful system of mining into the most perfect system of irrigation. Our dry seasons will then be no longer terrible, and we can afford to smile at all our other difficulties.

EPIPHYLLUM TRUNCATUM VIOLACEUM.

—
BY FLORIST.
—

A more lovely object than the variety of the old and well-known *Epiphyllum truncatum*, it would be difficult to select, even from the most extensive range of floral forms; in fact, it seems hardly possible to conceive anything much more beautiful than the rich, vivid, and varied tints which enamel its flowers, produced, too, in the greatest profusion, with the smallest amount of skill or attention, and at a season when there is the smallest number of beauties in Flora's train, and therefore is greeted with the greater welcome, and is nearly beyond comparison, one of the finest of all winter or early spring flowering plants, either in the greenhouse or out-doors.

There are a few particulars connected with the cultivation of the original species of the present variety of *Cactaceæ*, which deserve to be mentioned. It is usual, on account of the naturally prostrate and dense habits of the plant, to assist its development by grafting on some upright, free-growing individual of the same natural family, when it assumes a very graceful, somewhat pendent character; and by these means is elevated to a height which allows more space for the branches, and brings the flowers to a convenient level with the eye, removing the crowded appearance which their weight on the flexible stems causes them to take when produced on dwarfed, unworked plants. It is not unusual to select for this purpose a stock from the genus *Pereskia*,

P. aculeata being sometimes employed because of its free, quick growth, and the readiness with which the *Epiphyllum* "takes" upon it; but we hold this stock to be objectionable for several reasons. It is a climbing, or, more properly, a creeping plant, which for itself requires support, and therefore not suited to carry the additional heavy head thus placed upon it; besides the stem of *Pereskia* does not increase in substance, or but very slowly, after the insertion of the grafts, so that it is no uncommon occurrence to find a large, luxuriant mass of the *Epiphyllum* balanced, as it were, upon what in the contrast looks like a reed; no proportion existing between the stem and the head; and, moreover, we have found that plants of this species, when worked upon these stocks, are constitutionally more tender, requiring a much higher temperature, both for growing and the production of flowers, than when grafted on some other species of *Cactæ*.

The standard we prefer, is that offered either by the stronger species of *Opuntia*, or the erect *Cereuses*; we have seen magnificent species formed in a few years by inserting numerous pieces of the *Epiphyllum* on a tall stem of *Cereus speciosissimus*, a method we think preferable to the use of a single scion on the summit, as the effect is obtained in so much less time; indeed, it is quite possible to form a large plant almost at once, as pieces containing three or four years' growth will unite, with a little care, as readily as the single joint of the preceding year's production. Grafted on either the *Cereus* just named, or *Opuntia ficus indica*, the common Indian Fig, the *Epiphyllum* seems to gain much of the robust constitution of its bearer, for it will then grow and flower in a warm green-

house, whereas upon the stock before mentioned, it insists on the high temperature of a stove ere it will manifest either a healthy appearance, or the least symptom of blooming.

The routine culture of this plant is of the simplest description; it delights in a rich soil composed of loam, leaf mold, and reduced manure, mixed up with which should be numerous pieces of small potsherd, and a quantity of them placed beneath the soil at the bottom of the pot, that an effective passage for superfluous water may be secured; as the roots of all cactaceous plants are very impatient of excessive moisture. It will require to have the soil removed once a year, and to be liberally watered during the summer and while growing, with a reduction of the quantity until the blooming season is past. Observing to keep it continually either in the stove or the greenhouse, according to the description of standard it may be upon; unless, indeed, the temperature of the greenhouse in winter is kept very low to suit other plants, when it may be necessary to remove it to a warmer atmosphere to assist in the development of flowers.

This treatment is more suited to the temperature of the cooler locations on our coast, rather than in one of our warm climates, for it is well known we have many, according to locality.

PRUNING AND TRAINING HEATHS.

Being an admirer of that lovely tribe of plants the *Heaths* (*Erica*), which we are pleased to see are beginning to occupy the position they deserve in general estimation and among our florists here, we have been led to look somewhat into their natural habits, and to compare with them the usual modes of pruning and training; that the prevail-

ing taste for densely filled circular plants, is a correct one, perhaps no good reason can be adduced to disprove, providing the proper proportions are not outraged, and general character of the plants sacrificed to the production of a formal lumpish object.

By this it will be understood that we follow the fashion in admiring a round bushy plant, whenever it can be had without the appearance of distortion, and will as earnestly insist on having them thoroughly branched from the base as the most determined advocate of circular training; yet we think a little error is creeping into our methods of attaining to this desired form inasmuch as it relates to natural character. The usual mode of training these plants is to frequently remove the points of the growing shoots to induce bushiness, and because this succeeds to perfection with some varieties, it has been rather blindly adopted for all. What we desire to point out is, that this is a mistake; the adoption of any particular system of training with a family so extensive must be erroneous, as it would be to treat them in other respects exactly alike.

Our idea of the matter is that those which produce their flowers on or near the points of their branches, may be safely stopped in the usual way till they have become sufficiently furnished with branches; but to follow the same course with varieties that are distinguished by bearing their flowers in spikes or on a continued length of the stem, is to virtually disfigure the plants by preventing the formation of such branches as would yield the greatest number of blossoms; thus, for instance, all the varieties of the tricolor, of ampullacea, and of ventricosa, possess a character that will certainly be improved by stopping, as the production of more points

must result from the practice, and consequently more flowers will be borne, but those which grow and bloom in the manner of the hyemalis, Wilmoreana, Bowieana, Cavendishii, and several others should be pruned in a different manner; they are best when cut down close to the origin of the current season's wood, and afterwards allowed to grow on without interruption, as the plant is then composed of strong shoots only, and the display of flowers is in every way superior, while the habit of the plant is preserved in its native luxuriance.

THE CINERARIA.

As an admirer of this charming family, we have observed with much pleasure the interest that has been so generally taken for some time past among our amateurs and professional florists in their improvement, and abundantly they deserve it, for scarce another tribe is so admirably adapted to render gay in the resting time, even in our mild climate here of winter, the greenhouse or parlor. Those who bestow a little labor and attention on them in April or May, will then find themselves duly rewarded by the profusion of bloom which under judicious management is invariably produced.

When the plants have done flowering they should be cut down and set in a cold frame, or any other convenient, airy, and sheltered situation, where they require no further attention than an adequate supply of water to enable them to push forth a fresh foliage, which they readily do from the crowns of the old roots, and when of sufficient strength for propagation cuttings may be carefully taken off; the old plants are consequently destroyed, each cutting is potted in a sixty-sized pot, with a mixture in equal parts, of sand and

leaf-mold finely sifted, then placed in a frame with a gentle bottom heat, where they strike root and grow freely; when they are sufficiently rooted they should be shifted into forty-eight-sized pots, with a compost in equal parts of fresh loam and leaf-mold, to which is added a little sand; they should then be taken to a cold frame shut close, and slightly shaded during the hours of sunshine, until the plants recover from the check they sustain by shifting. Afterwards air is admitted freely by tilting the lights back and front, which prevents the plants from becoming drawn. As soon as they seem to require it, they are again repotted, placing them this time into the blooming pot, which should be those known as thirty-twos. The compost at this shifting consists of three parts maiden loam, two parts rotten manure, a small portion of well-pulverized sheep manure, and a little coarse sand, all well incorporated, but not sifted; they are again set in the cold frame or placed in the open air on a bed of coal ashes, in a sheltered but not shaded situation, where they may receive the benefit of the morning sun. Here they are permitted to remain until the cool autumnal nights approach, when, being impatient of any frost, they are removed to the frames. Those intended to be brought into flower in January require no further shifting, and are taken into the pits, or housed late in the fall for that purpose. Those which flower later are better adapted for specimens, and as they begin trussing their flower-stems, the strongest are selected and reshifted into twenty-fours, and by the time these are full of roots, the plants are in a profusion of bloom, and will continue so for several weeks.

Through the whole course of culture particular attention must be paid to

watering, as the *Cineraria*, when in a healthy state, absorbs a large amount of that element. In potting, it is a good plan to place a little moss in the pots over the crocks; it serves a twofold purpose — preventing the mold from obstructing the drainage, and retaining a moisture to nourish the roots of the plants.

In consequence of the liability of these plants to attacks from insects, especially green flies or aphides, it will be necessary to frequently fumigate them with tobacco-smoke, or if the entire foliage is dipped into a vessel containing tobacco water that has been allowed to settle into a clear state it will also act as a preventive; it must, however, be used quite clear, or the leaves will be disfigured by the sediment; these insects may also be removed with a brush, but it is rather a tedious operation; still, by some method the plants must be kept clean, or they will be soon completely disfigured.

Many prefer to raise their own plants from seed every year, as they often succeed in raising better plants from seed than by dividing the old roots.

ANTIRRHINUMS.

This class of plants from their adaptability to all the purposes of out-door decoration, the ease with which they are cultivated, and the length of time and profuseness of their general flowering, the infinite variety of their colors, and their general neatness of habit, have made them to be universally adopted and admired.

In our own garden last spring and summer, during the hottest sun and warmest and driest weather, a group of these Snap-dragons were untarnished objects of brilliant beauty from the commencement of April till November,

with no deficiency of interest, but ever remarkably rich, pleasing, and varied. The number of flowers cropped from these plants was really most remarkable, still they came on in such quick and constant succession as hardly to be missed, and when the eye rested on the cool deep green of their foliage, surmounted by the brilliantly gay or chastened colors of the flowers, a refreshing sense of pleasure was felt quite indescribable. *Antirrhinums* will always be objects of much regard with us.

To the amateur florist with a small garden, anxious to maintain a good display of blossoms, and with limited means to compass it, the selection of such only as are distinguished by a prolonged state of flowering for the filling of his beds and borders, is a matter of the first consequence, for unless this is attended to, much time and trouble will be expended to gain an unsatisfactory result. In such a position *Antirrhinums* may be relied on with a certainty of being one of the chief flowers of attaining nearly all that can be wished.

Healthy young plants placed in a border of tolerably good soil in March, will begin to produce flowers in June, and continue to do so till October or November, and the only attention required in return will be in this climate and dry season a good watering about twice or three times a week, and the removal of the decaying flower-stalks; where it is desired to keep the plants in a blooming state as long as possible, this must be particularly observed, for the production of seed which naturally results after flowering is inimical to the production of other flowers as the plant is unable to perfect both at once. This plan holds good with most profusely-blooming plants, and indeed the principle, to some extent, holds good with

all. The observation is, of course, unnecessary where high keeping is aimed at in the flower garden, for there no kind of seed will be allowed to mature, other plants and places being devoted to the purpose; yet, lest any mistake or disappointment should arise, we mention the circumstance for the benefit of those engaged in smaller places. How far this principle may be carried as regards other plants, is a question worthy the attention of all who have an opportunity to test the subject; we know, at any rate, that in very many cases, the result of the prevention to seed, and the simultaneous application of water and other stimulants to a renewed action in the plant, is productive of the desired end, when the time and season are propitious. With the plants in question, however, it is by no means speculative, but a matter of certainty. Besides these means of extending the blooming season, it is easy to have a succession of blooming plants to begin flowering at a later time, and this may be done in a manner to increase not only the floral display, but also the interest of the collection. Let the first crop of flowers be produced by plants of established sorts, propagated in the fall or winter, by slips from plants that have bloomed the previous season; these are readily struck under a hand-glass any time from September till the end of October, and as easily preserved in pots in a cold frame or conservatory; such plants will be in excellent condition to remove to the borders in spring, and will bloom as described. The second and only other necessary succession should be composed of seedlings; let the seed be sown in January or February in a gentle heat, or under hand-glasses in a rather warm border; they will with a little attention be handsome subjects to

remove where they are desired to bloom by the beginning of April, and will commence flowering in August or September, and last in perfect vigor. The pleasing anticipation of novelty among these will greatly enhance their value, independent of the display created, and the best of them will furnish cuttings for plants to bloom among the earliest in the following year. It is not, however, absolutely necessary to strike every season for the supply through the next, as the plants may very well be left two or three years in the same place, and only require to be cut into a proper size, and when left in this way have a very good appearance through our short and mild winter, fully equal to the small shrubs usually employed to clothe the beds with when somewhat cleared of their summer and fall occupants.

“THE FLORAL CALIFORNIAN.”

We hail with pleasure the advent of another periodical on flower culture in our State. It is published quarterly, 50 cents a year, at Petaluma, and edited by W. A. T. Stratton. We copy the following able, useful, and practical article of “Notes for Work in the Garden, Lawn, and Conservatory, for January, February and March:”

With the advent of winter comes the most important work of the year—the selection and planting of trees and shrubs, preparation of soils, care and management of tender flowering plants and bulbs—all crowd upon us in rapid succession, calling for that caution and discretion so very essential to success.

In the selection of ornamental trees for the adornment of home and its surroundings the inexperienced are too apt to plant too many than too few. The small embryo tree of three or four

feet in height makes but a small appearance on the lawn; and in the anxiety to have something to look at the mature tree is lost sight of, and the eye only calculates for the immediate present. As a consequence, inappropriate plants are planted, crowding one another, and what is equally as bad, they are more than likely improperly arranged, and as a result the majority, sooner or later, are dug up, a useless waste of time, labor, and expense. In the arrangement of trees or shrubs around our homes three very important points must be ever kept in view, viz.: Never plant or prune so as to obstruct the more prominent points of view from windows, doors, or porches. When selecting trees bear in mind the more mature tree. What will it be in years to come? Don't go to work on the principle, “I'll cut them down if they get too thick.” A tree or shrub if worthy of purchase and planting should bear the same relation to the planter as his offspring—and they are his children—of nature. And lastly, give the soil thorough culture. If there is any gratitude exhibited in nature for labor it is in the reward of greater perfection.

In these notes of garden work it is impossible to more than give a general idea of the various operations essential at this time of the year; they must of necessity be brief.

In the garden but little can be done excepting the preparation of soil and the transplanting of deciduous shrubs, and pruning. All hardy plants should be planted in their permanent places, for with the approaching warm days the swelling buds will indicate their period of rest has passed. To move plants when starting into growth is injurious.

Verbenas should be pruned close to the crown; all rooted layers removed;

the soil freshly manured and spaded. A much better way is to discard the old plants as soon as the young growth has started, so that soft cuttings may be taken off. These make far better plants yearly than the old ones. Never use the rooted vines; throw them away. The tender shoots root so easy that they will repay in thrift and greater number of flowers.

For borders or beds our Myrtle (*Myrtus communis*) is both appropriate and beautiful. It may be kept down to any size by pruning; will thrive in any soil; bears abundantly white, orange-like flowers in the fall of the year, and very fragrant in foliage and flower. For borders in cemeteries nothing can be more effective, as it luxuriates in hot, dry soils, as if carelessly indifferent to neglect. Many persons often purchase the dwarf English Box for these purposes. Our experience is, never plant it in this climate except a continued moisture can be maintained.

Dahlias that have remained in the ground at this late date should at once be carefully dug, all earth removed from the roots or tubers, and stored away in a cool, dry place. We find it much better to hang them up to a raft-er in the barn or outbuilding, as mice or rats often eat them.

Gladiolus should be dug and stored away, not but they will keep in the ground, but a few may be replanted, the remainder saved for successive planting for continuous flowers.

Phloxes that have remained more than three years should be dug, the clump divided, and replanted immediately.

Dielytra spectabilis, or Bleeding Heart, is a most beautiful plant in our climate, if the precaution be taken to plant in a warm but shady place. Remember that it must have perpetual

moisture. We are apt to neglect it when the top dies down and let the ground get dry. This is fatal to it. The best way is to plant the tubers near some late blooming plant that we must water. The same point must be kept in view with *Ranunculus*. Do not let them get dry in their dormant state if they remain in the ground in the border, especially if the place of their planting is hot and the soil stiff or adobe; they seem to lose their power of germinating.

All bulbs should have light soil immediately around them, and especially for their covering.

Peonies, which are a great favorite in the East, fail here, mainly for want of a little judgment; and that little judgment is often wanting even with professionals. Plant them in a cool, moist place, where they may be protected from our hot suns when they show the flower buds.

Lilies of all kinds should have been planted in November. It is not yet too late, even for the more tender kinds. As a rule the soil should be rather poor; if too rich for them, the disposition is to decay or not do well. We have found the dump pile most convenient to get soil for most of the Lilies, as here will be thrown the spent soil from pots in repotting, which is sandy and plenty rich in food for them. When the soil is to be prepared garden loam, leaf loam, and sand form an excellent mixture. Of our California varieties *Humboldtii* is the exception. We have seen it grown in the richest Fuchsia soil, apparently luxuriantly, in great perfection, eight feet high. *Washingtonia* is very sensitive, and will not tolerate any; this is our experience.

Amaryllis — *Johnsonii*, *Belladonna*, *Vallota*, and others—do not enjoy removal. Their roots remain in active

work all the year, and every season only increases their beauty. They all enjoy good, rich soil and liberal moisture.

Pansies should be at once planted if to be grown from the seed. Finer plants can be obtained when sown in fall or winter. They do not enjoy the heat of spring to germinate in. If special sorts are to be propagated cuttings must be used—the soft, green flower-stalks layered or cut off three or four inches long. Sand may be used, but garden loam is better. Keep them very cool; in fact, expose them to rain and frost without protection.

Carnations, and, in fact, Pinks of all kinds, are easiest propagated during this month out of doors.

Cuttings of all kinds of hardy shrubs, both deciduous and evergreen, should be planted at once, but this work should have been done last month to insure thorough success.

On the lawn the grading, sowing of grass seed, and general work should have already been done with our earlier rains. Avoid walking over them at this season of the year. The imprint of the feet on the fresh soil leaves the impress that can only be remedied by leveling off. All weeds should be carefully picked by hand, laying down boards to kneel upon in weeding. The resowing of thin spots should be done at once, as well as the planting of any shrubs in the border. No large growing trees are permissible, except in large grounds. Large trees in small grounds show a want of good taste. Only the dwarf-growing kind should be selected.

In the conservatory tender and half hardy plants that have thus far escaped the frost should be watered sparingly, excepting plants that are budding for flowers or are in bloom. Remember that all plants have their seasons

of rest, and during their semi-dormant state only moisture enough should be given to sustain life. All plants infected by scale should be thoroughly cleansed; the old growth cut back. Fresh soil should be given in repotting. This is one of the most important points of all—the quality of food each variety requires. In general terms, plants with fine, thread-like roots must have light soil, while those whose roots are coarse and fleshy require soils of much greater strength.

Fuchsias must have a light yet very rich soil; equal parts of well rotted manure, sand, and loam. Leave the manure in very coarse lumps; do not pulverize it.

Heliotropes require the same soil as Fuchsias, only pulverize well, and mix thoroughly.

Cactus and Cereus enjoy a rather coarse soil, not too rich, rather sandy. Water sparingly, if any, till the growth starts in spring time.

Epiphyllum, or Lobster Cactus, is an exception. Winter is their blooming time, and water must be given to mature the flowers. These Lobster Cacti should be grafted to flower well; in fact, many sorts are worthless except when grafted on other kinds or allied sorts. The sturdy quadrangularis or four-cornered Cereus is used by many, with the best of success. The preparation for grafting is very simple. Take a cutting, say twelve or sixteen inches long, lay it away for a week or two in the warmest place of the conservatory. Then plant in a four-inch pot. This will be the stalk to graft on. Put a stick alongside the cutting, say four inches longer than the plant, and then set away in a warm place to root. As soon as growth starts the grafting may be done. Now break off a slip of the Epiphyllum of three or four leaves and

cut the bottom wedge shape with a very sharp, keen knife. A simple cut three-fourths of an inch deep is made in the top of the stalk in the pot, carefully opened with the knife and the slip pressed gently into it; two or three of the coarse thorns plentifully found on most Cacti are stuck through the scion and stalk, so as to hold both firmly in place. Securely tie to the stick, and keep away from sunshine. In three or four weeks the graft will start into active growth, and by winter again a fine head of drooping leaves and gorgeous flowers repay the trouble.

MARCH.

The warm sunshine at this time of the year starts nearly all shrubbery into active growth. Manure must not be forgotten. It is the one thing needful to success. Flowers in this age of progression are bred up to the highest standard of excellence by professionals, and unless a similar culture is maintained by the amateur indifferent results must follow. The cramming process alone will suffer. Remember to spade the beds and borders well—not once, but three or four times—each time adding a good quantity of bread and butter for flowers; they all enjoy it, and since they cast a halo of happiness and purity all around, why not assist them?

Many of the early spring flowering bulbs will this month bloom. Always label each color for future reference, and as the foliage decays the label still indicates their locality.

Seeds of annuals should be immediately sown in sunny spots. The frost will disappear by the middle of the month. The borders may be filled for the season. Nearly all slips and cuttings that have rooted may now be safely transplanted to their permanent locations.

Roses, especially, need attention. The young growth is coming very vigorously, and mildew may appear in a night. Sulphur freely two or three times a week, as a preventative, not as a cure; it will not hurt the bushes or flowers.

Dahlias should be planted now. The best method is: Place the tubers in a box of very rich, light soil, at the south side of the house. In a week or two the sprouts will show above the ground; remove the soil and roots from the box, and carefully separate by splitting off one of the roots with a sprout on. Plant in the very richest of soil, at least four inches deep. A slip or cutting at this time of the year will grow and flower just as freely as a root, and have greater vitality. Never plant Dahlias too early, and never leave them in the ground over winter. When planted early they become exhausted by excessive flowering before fall, and when other flowers are scarce Dahlias are gone also. Plant late—even April 15th will do; give plenty of water, and when the frosts come in November they will be covered with flowers, and will be far more perfect in color and formation.

Heliotropes may be planted out by the end of the month. There are three things essential to success—very rich soil, plenty of water, and a very hot place; hot sunshine is indispensable.

In the conservatory continued airing on warm days must never be neglected. Shading from the hot sun is indispensable. The too common error of simply frosting the glass and letting the plants take care of themselves is too slovenly. Plants require air just as much as children. Frequent showering of the foliage is requisite to health.

The red spider will make due appearance, also the green fly. The for-

mer may be known by the reddish appearance of the leaves, especially of Fuchsias. A moist atmosphere is fatal to them. Lay the plants down on a sieve or chair bottom, and with the sprinkling pot thoroughly wash the inside of the foliage; this will destroy them. Green flies can only be eradicated by fumigation. Close the windows tight; procure a pan or earthen vessel, and place a shovelful of coals therein; dampen a handful of tobacco stems slightly, and lay them on the coals; they will create a dense smoke, destructive to animal life; keep the place tight for thirty minutes. Wash the plants freely after smoking, and repeat once a week.

HISTORY OF THE JAPANESE PERSIMMON.

BY HENRY LOOMIS.

The common Date Plum or Persimmon (*Diospyros lotus*) is called the European Lotus, and the Date of Trebizond. It is a tree 20 to 40 feet high, with oblong, shining leaves, small, reddish, white flower, a native of the coasts of the Caspian Sea, Mauritania, etc., but cultivated and naturalized in the south of Europe. Its fruit is the size of a cherry, and in favorable climates larger, yellow, sweet, and astringent. It is eaten when overripe, like the Medlar, or is used for preserves. It is sometimes brought to Constantinople, and in that part of Europe it is larger than in Britain or Italy. The tree bears fruit abundantly in the neighborhood of London.

The *Diospyros Virginiana* is the well-known wild Persimmon of the Southern, Western, and Middle States. It differs very much in size and in the quality of the fruit. Some of the varieties are said to ripen without frost,

and I am informed that a very large specimen of this fruit is now being propagated in Texas, having recently been discovered there by Dr. Durr, of Washington County, and is called the "Dr. Durr Persimmon."

The tree grows from latitude 42° to the Gulf of Mexico. It grows well at Cleveland, Ohio, in southern Michigan, and I have been told is found at Lynn, Mass. It prefers a soft, black soil. The tree averages about 30 to 40 feet in height, but sometimes attains a large size. One of the trees at Kingsessing, near Philadelphia, is over 70 feet in height, and 2 feet in diameter. Another in the Kew Gardens, England, is 40 feet high. The heart wood is brown, compact, strong, and elastic. It is used in Philadelphia for shoe lasts, in Baltimore for wheel hubs and mallets, in Charleston for shafts to carriages, and is regarded as second only to the lance-wood for this purpose.

The fruit is used for puddings, and is sometimes packed in sugar, when it loses its astringency, and is much prized for preserves. It is pounded up with wheat bran, forming cakes, which are dried and kept to make beer.

The *Diospyros kaki* grows in the same varieties of climate and soil as the wild Persimmon. It is found in the greater part of Japan in abundance, and also in China from Canton to Peking. Large orchards are to be seen in the vicinity of Peking, which has a climate similar to that of New York. One of the trees has borne fruit in the open air in New York City.

The trees grow to a height of from 40 to 50 feet, and are said to live 100 years. They are very hardy and prolific, and a failure of the Persimmon crop in Japan is unknown. The blossoms are small, of a light yellow shade, and appear in May or June. The Di-

ospyros Virginiana is dioecious, and some of the trees do not produce fruit. But the kaki trees have probably been changed by cultivation, so that all are fruitful. At least such is the case with the grafted varieties.

The varieties of the fruit differ very materially in size, flavor, and quality, according to soil, climate, and culture. There are said to be 100 varieties, varying in size from that of a common grape to over a pound in weight. Some, also, are solid like the apple, and ripen on the tree, while others are rendered more palatable by packing in bran or in tight casks for a short time to remove the astringency. Another method is by dipping in hot water and then allowing them to lie a few days before eating. Some of the choicest fruit is ripened in this way and they constitute the most common and popular varieties.

An exact description of the various kinds is not to be obtained. The names change with different localities, and the best authorities disagree as to the relative value of the varieties. From careful comparison I have selected the following as the most desirable, and the description is the best that can be obtained. On some points there is a disagreement, but in general the conclusions are probably correct.

Nihon—Slightly oblong or round, but sometimes nearly flat; color, yellowish red, with black spots on the surface and also in the flesh. It is not so large as some of the others but early and very productive. The flesh is solid and it keeps a long time. It ripens on the tree in September and is particularly sweet and highly esteemed for its flavor. It is grown in the vicinity of Tokio.

Mikado—Flat or like a tomato in shape, medium size, bright, yellow color. This is a very common and popular

fruit in the vicinity of Yeddo. It is not much used for drying. Some of the specimens have no seeds, and especially when the trees are young.

Daimio—Slightly oblong, reddish color with dark points; medium size, flesh soft; ripens in October; called "Yeddo's best Persimmon."

Taikoon—Round, of a pale or greenish yellow color; fair size; ripens in October; a great favorite in western Japan, where it grows to a large size.

Royal—Similar in shape to the Taikoon, but more yellow in its color; large size; ripens on the tree. It is said to be good for drying.

Imperial or Yamato—This is shaped like an acorn or minie ball. It is very large, and with red and sometimes dark stripes on the surface. The flesh is soft when ripe and particularly sweet and fine. When peeled and dried, it resembles figs in appearance, being covered with sugar that exudes from the fruit. It will ripen on the tree, but is usually picked and ripened in tubs. Season, latter part of October to January (or probably later in this country). The most popular variety among the Japanese. It is grown in Koshu, but originated in the province of Mino, in Central Japan.

Gogen—Like the Imperial except in size, but it is said that the trees are more prolific. Used for drying.

Mamegaki—This is quite small, and is not good for eating, but is useful for making paint. The timber is very beautiful, being white with heavy black tracings or mottled in appearance. Some specimens are black, and exceedingly valuable for cabinet work.

A small variety is found in southern Japan that is seedless, but it is used only for drying. The so-called "seedless" variety advertised here is undoubtedly a mistake.—*Pac. Press.*



Red and Gun.

THE COMMON EASTERN BROOK TROUT.

How many of us, now trout fishers in California, have vivid and pleasant recollections of beguiling his congener in the small and sparkling streams of the far Eastern and Middle States. There is hardly a cold and rocky stream in any part of New England or North-ern, or even among the mountains of the Middle and Southern States, where this species is not found in fair abundance, notwithstanding the serious draught upon them by all sorts of legitimate or illegitimate modes of depleting them. In regard to weight, they alternately vary from three to four ounces to two pounds; and in color, according to the character of the brook or river which they inhabit. So apparent is this difference of color in this family, that, in the several sections of the country where they are found, they are designated by the names of silver or fall trout, as in Lake George; and the black trout, as in many of the smaller lakes or "ponds" of New England. The only civilized mode employed by the people there for taking them is by the hook; but while the scientific angler prefers the artificial fly (with an appropriate reel and light and rather pliable rod), large numbers, as in California, are annually destroyed

by many grown persons, as well as farmers' boys, with the common hook and earth worm. As to the heathenish mode of netting this beautiful fish, we can only say that it merits the most earnest condemnation of every gentleman and the utmost rigor of the game laws, and the penalty should be higher than it generally is in most of the States, both East and West. As all anglers are well aware, the common trout, everywhere, is proverbially one of the gamest and most skittish of all the finny tribes; but when he happens to be a little on the feed, he is as fearless as a hawk, and at such times leaps nearly out of the water after the bait or fly, and when hooked jumps into the air as if for the purpose of defying the cunning of his human enemies. According to our experience, the best bait for early spring fishing is the common worm, if it be admissible at all by the true sportsman; but for June, July, and August, we prefer the fly. In lake fishing sometimes a minnow is preferable to either. The great charm of fly-fishing for trout is derived from the fact that you then see the movement of your fish, and if you are not an expert hand, the chances are that you will capture but a few out of a hundred that may rise to your hook. You can seldom save a trout unless you strike the very instant that he rises or leaps. But, even after this, a deal of care is often

required to land him in safety. If he is a half-pounder you may, if you will, pull him out directly; but if larger than that, after fairly hooking him, you should play him with a sufficient amount of line, which, when well done, is a feat full of delight and poetry. The swiftness with which a trout can dart from his hiding place after a fly is truly astonishing; and we never see one perform this operation without feeling an indescribable thrill quivering through our frame. The fact that it seems to be the only fish in Europe and the Eastern States which nature has designated by a row of scarlet spots on the sides, and in California mostly with a lateral streak, would seem to imply that she deemed it the perfection of her finny tribe creations, and had therefore fixed upon in it this distinguishing mark of her skill.

SALMON FISHING ADVENTURE.

Charles Lanman in his book entitled "Adventures in the Wilds of the United States and British American Provinces" in two large volumes (rare now) and, by the by, one of the most interesting works that has ever appeared from a sportsman's pen, relates an interesting adventure of his on one of the tributaries of the St. Lawrence. He says:

"I must now give you some account of my experience in the way of salmon fishing with the fly, of which glorious sport I have recently had an abundance.

"My first salmon expedition of the season was to the St. Margaret River. I had two companions with me; one an accomplished fly-fisher of Quebec, and the other, the principal man of Tadousac, a lumber manufacturer. We went in a gig-boat belonging to the

latter, and having started at 9 o'clock we reached our destination by twelve. We found the river uncommonly high, and a little rily. We made a desperate effort, however, and threw the line about three hours, capturing four salmon, only one of which it was my privilege to take. He was a handsome fellow, weighing seventeen pounds, and in good condition; he afforded my companions a great deal of fun, and placed me in a peculiar situation. He had taken the hook when I was wading in swift water up to my middle, and as soon as he discovered his predicament, he made a sudden wheel, and started down the stream. My rod bent nearly double, and I saw that I must allow him all the line he wanted; and having only 300 feet on my reel, I found it necessary to follow him with all speed. In doing so, I lost my footing, and was swept by the current against a pile of logs; meantime my reel was in the water, and whizzing away at a tremendous rate. The log upon which I depended happened to be in a balancing condition, and when I attempted to surmount it, it plunged into the current, and floated down the stream, having your humble servant astride on one end, and clinging to it with all his might. Onward went the salmon, the log, and the fisherman. Finally the log found its way into an eddy of the river, and, while it was swinging about, as if out of sheer deviltry, I left it, and fortunately reached the shore. My life having been spared, I was more anxious than ever to take the life of the salmon which had caused me my ducking, and so I held aloft the rod, and continued down the stream, over an immense number of logs and rocks, which seemed to have been placed there for my especial botheration. On coming in sight of my fish, I found him in

still water, with his belly turned upward, and completely drowned. I immediately drew him on a sand-bank near by, and, while engaged in the reasonable employment of drying my clothes, my brother fishermen came up to congratulate me on my success, but laughing, in the mean time, most heartily. The lumber merchant said that the log I had been riding belonged to him, and it was his intention to charge me one shilling for my passage from the rift where I had hooked the salmon, to the spot where I had landed him, which was in view of the Saguenay; and my Quebec friend remarked that he knew the people of Yankee-land had a queer way of doing things, but he was not acquainted with their peculiar mode of taking salmon.

PEARL FISHING IN TORRES STRAITS.

As we smoked away, we chatted on different subjects, and among others the peculiarity of the zoophytes, polypes, etc., and the extraordinary and incredible rapidity with which these dangerous coral reefs are constructed. The boat lay quite still, and as we surveyed the surroundings it was evident we were in a circular chamber of the reef. The water below us was so transparent that every object could be seen distinctly. The depth of this basin was about five fathoms, and within this area the reef walls seemed to be almost perpendicular, but to the south of where the boat floated it "shelved" gradually, and there appeared to be an archway leading under the reef. All eyes were concentrated upon this spot, as it seemed to be alive with fish going in and out. I proposed to shift the boat to the centre of attraction, and I would put the diving-dress on for the purpose of seeing what it all meant. We drew

over the opening and cast the anchor, and in a very short space of time I found myself at the mouth of what proved to be the access to a coral cave. The entrance or hall—for that was what it resembled—was about twelve feet wide, extending, from beginning to opening of the cave, about sixteen feet. As I wended my way through this hall, the walls of which seemed quite perpendicular, I appeared to drive before me an "army of finny soldiers." When I reached the mouth of the cave, what a wonderful sight was before me! The dimensions of the apartment would not cover more than a hundred yards square but the formation was irregular. It was neither circular, oblong, nor square, but a sort of combination of all three—the roof forming a sort of dome, made up by the raying branches of the coral "trees" that bordered the chamber's walls, having a circular opening in the centre of the roof through which the sun's rays shone, giving an iridescent splendor to the internal appearance of the cave.

As I stood and looked around, the idea forced itself on my mind that I had really reached fairy land. What a grand sight it was! Here and there in the middle and on both sides of this marine palatial apartment grew coral trees varying in height from one to three feet, having perfect stems and branches, while their shape and symmetrical proportions would have persuaded any one that they had been regularly cared for by a most attentive aquatic gardener, and not reared by insignificant little zoophytes in this artistic way. To right and left of where I stood there were alternate pillars and alcoves; in some of the latter a small coral tree appeared, with a base very similar to a flower-pot. The tints both of foliage and stems of these coral trees

varied, embracing transparent white, light pink, brown, and dark red. It was wonderfully pretty to see the different shades of golden light thrown upon the tips of the branches of these different colored coral trees. No description I can give will convey an accurate idea of the scene. Within the cave there were hundreds of fish of every description swimming in and out of the crevices, and across the further end from where I was standing. Some of these were blood-red, others red, with silver and black stripes crossing the body from top of back to belly, while others were mottled with gold, bronze, and silver spots. The attitudes they assumed were very singular, and the effect upon the beholder most peculiar. While the main body glided about, passing and repassing, others remained stationary, some appearing to stand on their tails surveying the upper regions, while others stood on their heads as if trying to bore a hole through the floor of the cave. Among the number there were extremely hideous-looking brutes—the devil-fish to wit; some of the smaller fish, however, outvied this monster in fiendish outline. There was one creature in particular I noticed. It measured, I should say, from tail to nose, about five or six inches, having a bull-dog flat-head, pug nose, red, glistening eyes, with rayed barbed spike cropping out from the back, and a tail similar to what his satanic majesty is generally represented to possess. In spite of this and other repulsive objects that floated about me, the scene on the whole was well worth seeing, and I did not grudge the time and labor spent.

When I had divested myself of my diving-dress, we started on our way, and reached our destination before sundown.

The next day when hard at work

sending up pearl oysters, I saw one of the white monkeys. It was perched on its hind legs, and appeared to be eating something from its right hand in the same way that one of our common brown monkeys munch an apple, a piece of bread, or nut. When I have mentioned the fact of seeing this white marine monkey to several people, they have exhibited doubts in their phizzes—not on my veracity, but firmly believing that at the time I supposed the object was before me I was laboring under a mistake, or had an attack of pseudoblepsis. Nothing of the kind. Let the reader ask any diver who has been pearl fishing in Torres Straits for any time and he will confirm what I say about the matter. Excepting in color, the creature is a perfect model of the ordinary monkey.

At the end of fifteen days we had exhausted the pearl bed we were working on, and we hoisted the anchor and set sail for the schooner. Three days only elapsed after our arrival on board when the two years I had signed articles for terminated, and within a week therefrom I was on my way to Brisbane with my hard-earned wages in my pocket.

What a strange thing life is! As memory carries me back to the period of my boyhood, when living on our little island among my brothers and sisters and the people of our tribe, I can not but come to the conclusion that in many respects our social and political life is preferable to, and in advance of, what I have seen practiced in so-called civilized communities. At any rate our simple life is never marred by low vices incident to all European countries I have visited—to wit, drunkenness, betting, swearing, trickery in every shape and form in business, the tusseling and struggling after the god mammon, often to the exclusion of friendship, and

the violation of good faith between man and man. But there, my tale is ended, and I won't take up space moralizing or philosophizing. As I said before, it is a strange world, and the drama of real life opens up a wider field for thought than that of fiction. Last year I was daring the dangers of the deep up North; this year I am employed looking after Old Dandy—a clumsy but quiet trustworthy quadruped. I often look into his kindly old face—when he comes to me in the yard, and puts his big head on my shoulder, as much as to say, “Give me a rub and feed, old man”—and think what a contrast in the mode of life I now lead, tending his wants, and that of my pearl fishing experience. Where shall I be next year? or you either for that matter, dear reader? This is a question none of us can answer, and if we could I don't know that it would do us any good. One thing I do hope, and that is, that I shan't be down among the queer objects to be seen when pearl fishing in Torres Straits.

SALMON trout have made their appearance in Santa Rosa Creek.

THE small streams about Lakes Pilarcitos and San Andreas are reported full of fish going up to spawn.

IN about two months hence the Fish Commissioners will have for gratuitous distribution in public waters a large number of McCloud River trout.

To Lawyer B. S. Brooks belongs the glory of eating the first shad caught this season, and the folly of paying \$10 for it. Col. W. H. L. Barnes got away with the next three brought to market, paying the same rate for them.

Selected Articles.

THE CALIFORNIA LINNET.

Beneath these fruit-tree boughs that shed
 Their snow-white blossoms on my head,
 With brightest sunshine round me spread,
 Of spring's unclouded weather;
 In this sequestered nook how sweet
 To sit upon my orchard seat!
 And flowers and birds once more to greet
 My last year's friends together.

Once have I marked, the happiest guest
 In all this covert of the blest;
 Hail to thee, far above the rest

In joy of voice and pinion.
 Thou, Linnet! in thy brown array,
 Presiding spirit here to-day,
 Dost lead the revels of the May,
 And this is thy dominion.

While birds, and butterflies, and flowers,
 Make all one band of paramours,
 Thou, ranging up and down the bowers,

Art sole in thy employment;
 A life, a presence like the air,
 Scattering thy gladness without care—
 Too blest with any one to pair,
 Thyself thy own enjoyment.

Upon yon top of laurel trees,
 That twinkle to the gusty breeze,
 Behold him perched in ecstasies,
 Yet seeming still to hover;
 There! where the flutter of his wings
 Upon his back and body flings
 Shadows and sunny glimmerings,
 That cover him all over.

While thus before my eyes he gleams
 A brother of the leaves he seems;
 When in a moment forth he teems
 His sweetest notes in gushes;
 As if it pleased him to disdain
 And mock the form which he did feign,
 While he was dancing with the train
 Of leaves among the bushes.

MEXICAN SCENERY, BOTANY, ETC.

Not far from the old military road which unites the Mexican seaport of Tehuantepec with the cities of the table land there stands an ancient Spanish fort, *El Fortin de Tarija*, which is now used as a storehouse by the pro-

prietors of a neighboring copper mine, while one of the larger outbuildings has been converted into a tavern, where the stage-coach stops for dinner.

Posada de dos Mares, Hotel of the Two Seas, seems rather a strange name for a *posada* situated in the heart of the sierras, and at an elevation of at least twelve thousand feet above the level of any sea; but if the traveler deigns to alight and join the *table d'hôte* of the humble *posadero*, he may convince himself that the name is not so very inappropriate after all. "Forty minutes before the coach starts, señor," my host will observe after dinner, "and if you never passed here before, perhaps you would like me to accompany you to the fort and show you the *alta vista*, the grand view, from the parapet?"

"Grand view? Is there anything exceptionably grand about it?"

"Yes, sir, it is the grandest view in America, for you can see—*los dos mares*—the two oceans at the same time! I only charge you one real (twelve cents) extra."

Who has never seen two oceans at the same time will very likely invest a real. The view is grand, indeed. You stand on the backbone of the American Continent, which measures less than two hundred miles from shore to shore here, and see the Gulf of Mexico so plainly that you might distinguish the smoke-trail of the New Orleans packet or the glittering towers of St. Juan Ulloa, while the Pacific, though thirty or forty miles nearer, glistens faintly through a gap of the Chiapas Mountains, and, but for the sharp-drawn line of its horizon, might be mistaken for a mountain lake.

But it is not the water which constitutes the grandeur of the view. It is the land, the main-land of the Western world, of which you see a larger and

fairer portion from the parapet of Fort Tarija than from perhaps any other point between Mount St. Elias and the Peak of Aconcagua. Far from the north, from the distant border State of Sonora, descends a mountain chain, which is easily recognized as the Sierra Madre, the main chain of the American Continent, the southern prolongation of the Rocky Mountains of New Mexico and Colorado. A second sierra, a continuation of the California Contra Costa Range, rears itself against the northwestern sky, and may from here be traced through a succession of fainter but snowier summits, which seem to rise with the distance, till they culminate in a stupendous peak, the extinct volcano of Culiacan, which looms like a jagged white cloud over the edge of the horizon.

About ten leagues, or thirty English miles above the fort, the two sierras unite, and between their icy ridges, their wild cliffs and their forests of evergreen pines inclose a mountain-land which is, perhaps, after all, the true paradise of the Western Hemisphere. From the region of everlasting snow to the lakes and tropical fruit groves in the valleys that communicate with the primeval forests of the *tierra caliente*, this vast, triangular terrace-land, the great mountain valley of Oaxaca, exhibits every degree of elevation, the climate extremes with all their intermediate grades, and almost every variety of the American fauna and flora. On a surface of six thousand English square miles, the eastern half of the State of Oaxaca unites a greater abundance and variety of animal and vegetable life than any other American country of equal extent, and the exuberant fertility of its lower valleys is only equaled by the coast regions of the Sunda Islands. Life seems intens-

ified here. The mightiest trees and the strongest animals, as well as the sweetest fruits and most brilliant birds, are found together in this garden of the Hesperides, which (from all but a political point of view) would appear, even to a patriotic Yankee, just as superior to the finest portions of the United States, as the garden spots of the Ohio Valley are superior in beauty and fertility to the most favored districts of Labrador.

Between the two main forks of the Rio Verde and within a circuit of fifty English miles, the naturalist may find from sixty to sixty-five different species of Palm trees, wild-growing Oranges, Figs, and Almonds, four varieties of Bananas, the *Adansonia*, and the Dragon tree with their gigantic trunks; the most magnificent butterflies, the largest reptiles and carnivora of the New World, including the *Boa saxatilis* and the jaguar, and the strongest, if not the largest of all American birds, for the forests of Southern Mexico are the favorite home of the harpy eagle, the king-bird of the Western Continent.

MANGOES.

This delicious tropical fruit is fairly acclimatized in Queensland, and the last season seems to have been particularly favorable to a bountiful crop. From various parts of the country we hear of excellent fruit having been produced from fruit received from Java by the Acclimatization Society, and by the Curator of the Brisbane Botanic Garden. A tree in the Society's grounds has produced this season a single Mango of exceptional size and weight. It turned the scale at 21 ozs. (the general run of the Mango is only from 8 to 12 ounces.) The shape, flavor, and other characteristics of the fruit have deter-

mined *connoisseurs* that a new variety has been introduced into the colony, and one which (although not the best) may take rank with the Alphonso, Strawberry, and Raspberry varieties.

Mr. Gossett, of Rockhampton, has also been highly successful in raising a fine Mango, weighing 20½ ounces, from a seedling of the Dodhol variety, which was sent to the Brisbane Botanic Gardens from the Royal Botanic Gardens, Calcutta, in 1868. This fine fruit differs slightly in aromatic flavor, shape, and size from its older congeners, but as the tree ages it will acquire all the luscious taste, the firm flesh, and dark flavor of these. It has very little fibrous tissue around the stone, and that little will disappear with age. Last year, Mr. E. Goertz, of Kangaroo Point, sent to the Curator of the Botanic Gardens a Mango weighing 26 ozs. This fruit was the produce of a seedling grown from fruit from a Dodhol Mango in the Gardens.

Further north still, at Bowen, Mr. M'Millan has been highly successful in growing Mangoes. He expects to be able next season to supply the Brisbane and Sydney markets.

The Mango requires to be understood in order to render its cultivation a success. Many people fail from watering their plants during the flowering season. This is a mistake. The Mango requires dry weather at this time, and the reason that the trees were so prolific last season was that the weather was fine and dry during the flowering time. It has been said that the Mango is incapable of producing good varieties from the seed. This is an error, which practice has demonstrated to be such in this country. The above examples are testimony sufficiently rebutting the statement.

In form, flavor, size, and other char-

acteristics seedling Mangoes vary greatly, but the fruit does not necessarily take after the parent plant. At the same time it is doubtful if there be any fruit which will better repay the careful selection of seed from which to propagate. The question of seedling Mangoes is one of the greatest importance, from the fact that the tree does not take kindly to a strange soil and climate when removed. Hence, also, layering, as a means of propagating, can be made only slightly applicable. In grafting again, it is a necessary element of success that the two living trees be brought together, and this fact necessarily precludes grafting operations on an extended scale.

It has, however, been amply demonstrated that Mango seedlings will produce excellent fruit, and that new varieties may be raised from the seed in the same manner as new varieties of other fruits are produced—viz., by their habit of sporting.

The new variety in the Acclimatization Society's grounds has been named the "Dr. Scheffer," in honor of the Director of the Botanic Gardens at Batavia, whence the plant in question was received. It was the produce of a seedling plant received from Batavia, and which fruited for the first time last year. Being then so young, however, the fruit did not present any remarkable features, but this year the one fruit yielded by it developed an extraordinary size, and weighed on being put in the scale 21 ounces. As 12 ounces would be considered a high weight for ordinary Mangoes, this remarkable distinction in size of fruit, added to marked difference in shape, etc., from known sorts, has convinced Mr. Bernays that the Society has been so fortunate as to raise a new sort, resulting possibly from the sporting not unusual in

seedlings, together with the sudden change in climate and soil which this particular one has experienced. This fact would appear to refute the theory commonly held that seedling Mangoes never come to much, and are, in fact, valueless. As the quality of the tree has only now been discovered, little has been done in the way of propagating it, only three grafts having been made from it on ordinary Mango stocks, and these have already been distributed; but doubtless, now that the value of the variety has been demonstrated, every effort will be made to propagate largely, and spread the sort throughout the gardens of the colony. The new Dr. Scheffer is believed to be one of the finest varieties of Mango ever produced.

The Mango crop of this season promises to be very prolific. We have already to acknowledge receipt of the first fruits, in the shape of a very fine specimen of fruit from the Acclimatization Society, and can vouch for its superior flavor and delicacy.—*Queenslander*.

EARLY VEGETABLES.

As a general thing the uplands or grain plains of California are not good for the production of vegetables, unless well irrigated. There are, however, many kinds of vegetables that can be raised early in the season in most any locality without irrigation. These are such as will germinate from the seed at a low temperature, and are not impaired by light frosts. Among these early vegetables are Peas, Beets, Carrots, Parsnips, Radishes, and Lettuce. Any of these may be planted at the present time in good soil, and in sheltered localities, as on the south side of the buildings or fences, and cultivated with success. Their growth will, of course,

be slow during the winter months, and if we have very cold weather and frosty nights the tops may be cut off, but the roots will remain alive and vigorous, and they will be gaining what all vegetables require to come to maturity—age. When warm weather begins to come in February, they will take a new lease of life and grow rapidly, and almost before one would think, the tables of those who plant them will be graced and cheered with early vegetables raised by their own hands and on their own lands. Not only farmers, but town and city people, if they will, can thus have early vegetables, nice, crisp, and fresh from their own gardens. Of Peas, obtain from the seedsmen the early dwarf kind, of Beets the early Basano, of Carrots the early yellow, of Radishes the early turnip or round root. If you are fond of greens obtain a little Kale seed and sow it, and in a short time, if sown in a good warm exposure, you may enjoy a warm boiled dinner of pork, potatoes, and greens. There is nothing like having things early in the season, except it may be the satisfaction of plucking things from your own garden.

The Early Rose Potatoes may also be planted now and covered with half-rotted manure instead of soil, and by taking a little pains to cover the tops with loose straw on frosty nights, can be successfully cultivated.—*Bulletin*.

THE PINEAPPLE ISLANDS.

The Bahama Islands furnish nearly the whole supply of Pineapples that reach the American market; and that tropical group of coral islets, Eleuthera, grows about three-fourths of the entire crop.

The first shipment of Pineapples to the United States was made about the

year 1820 by Thomas Cash, of Harbor Island, grandfather of Captain Cleare, in an American schooner called the Levi Rowe, of Fairhaven, Connecticut, commanded by Captain Wm. Rowe. The fruit reached New York in good condition; the venture proved successful, and from that time forward the shipment of Pineapples from the Bahamas grew into a regular and profitable business; an impetus was given to the cultivation of the plant, and with growing demand and increased supply the traffic has risen to the extent of about \$500,000 annually. By far the largest portion of the crop is supplied by the island of Eleuthera, and principally grown by inhabitants of Harbor Island, which lies on the opposite side of the vast and beautiful harbor, the finest of the Bahama Islands.

That the soil of Eleuthera should yield such an abundance of delicious Pineapples is a matter for wonder to a person who has been accustomed to the fertile lands of the United States. One who has never been on a coral island can form but the faintest notion of the exceeding roughness of the surface and the ungrateful aspect of the ground. The island of Eleuthera, which furnishes such vast numbers of Pineapples, is, indeed, covered in the main by a wild vegetation, while the earth from which it springs is in great part of the roughest conceivable character of the rock. Holes of every size, form, and condition, some of them partly or wholly filled with dirt, the debris of decayed vegetation, loose fragments, large and small, round and angular, sharp and hard, everywhere abound. The rock sticks up its stinging points and cutting edges in the most irregular and provoking fashion. No plow, no spade, no hoe, can here be used. The only thing that can be done is to stick a

sprout into one of the holes, and let it take care of itself, which it almost invariably does right well; for it likes that kind of soil, and sips its sweet nourishment from the little dirt it may happen to find in the hollow of the rock.

The holes are very close together, the sprouts are placed scarcely a foot from each other, and as the plant grows up it spreads its long, sharp, hard leaf blades, with edges armed with little rasping, saw-like teeth, up from the ground and abroad in every direction. The plant has a thick supply of these out-bending leaves, lapped closely one over the other near the ground, and out of the center of which comes up the fruit, one Pineapple only to each plant, which then perishes, but leaves behind a progeny of young sprouts, and these being stuck into the hollows insure a new crop for the succeeding year. This replenishing can be kept up for about six years, and then the whole field, about exhausted, is left to itself, the plants die out, in the course of time the soil is renewed, and fresher fields now demand the care of the Pine grower.

The only attention given to the plant is to keep the field clear of weeds, and that is almost daily work the year round. One negro can attend to about two acres. The worst weeds to contend with are a species of bidens, a plant very well known in the United States as Spanish needles, and a kind of crab grass. One object of placing the plants so close together is to give the Pineapple possession of the soil, and the weeds little chance of usurping the ground. The sight of a Pine field is astonishing, for it presents a broad, intricate jumble of a vast mass of interlacing leafy sword blades; and the first impression is that such a jam of vege-

tation would be utterly incapable of producing any fruit whatever, whereas the fact is, an acre properly attended to yields the enormous number of ten to twelve thousand Pineapples.

To one who has always lived in freezing latitudes, the sight of a spot like Harbor Island is animating and enlivening beyond anything that words can tell. The Cocoanut trees, loaded with fruit, wave their beautiful, long, ribboned leaves among the pretty little clustering houses, each with its garden where the great bunch of luscious Bananas hangs by the bending stalk from among the green, long, broad leaves; and not wanting, either, are the delicious Sapadillo, the Tamarind, Guava, Papaw, Sugar Apple—one of the sweetest and most acceptable fruits of earth—the Sugar Cane, Indian Corn, and Sweet Potatoes in abundance, all ripe or ripening at this very moment; while the Watermelon, Pumpkin, Muskmelon, the wild Sea Grape, and many other good fruits have been the products of the summer just passed away. The Cocoanut tree bears fruit all the year round. Let the eye roam where it will amid the heads of these noble trees, it is sure to be greeted with the welcome sight of the clustering nuts hanging by short stems from among the thick-set leaf stalks. A hundred years, and more than that, these glorious plants thus continually send forth their wholesome fruit, and seem almost to say: "Come, man, while we are here you need not starve." And if ever a thing looked as if it did not live for itself, but for something else, it is the Cocoanut, which actually appears as if it grew only for the benefit of man.

THE stock men of Kern County say they have not had so favorable a season for years as the present one.

Editorial Portfolio.

THE GREAT BIGARREAU OF MEZEL.

The continually increasing interest which is evinced throughout the continent and all parts of our State in the cultivation of small fruits, the Cherry, the Apricot, Plum, etc., is generally noted by those interested in horticulture.

Among the many native Cherries which seem particularly adapted to cultivation on this coast few will be found to excel in many valuable characteristics the Great Bigarreau of Mezel.

The fruit is in size very large; in form generally obtuse, heart-shaped, and flattened on the sides; the surface is uneven; color, a dark reddish purple, approaching almost to a black at maturity; the stem is long, rather slender, and placed in a deep regular cavity; the pit is large and oval; the flesh is a purplish red; firm, a trifle coarse, but juicy, sweet, and good, though not of the highest flavor. In the Eastern States it ripens the last of June or the first of July.

The tree is a strong, vigorous grower, rather crooked when young, but becoming at mature age a broad, open, spreading tree, with large leaves, and producing abundantly. The fruit has always commanded a high price in the Eastern markets. It is not a large bearer when young, but after twelve years becomes a good and regular bearer.

PUBLICATIONS RECEIVED.

"The New Guide to Rose Culture," the Dingee and Conard Co., Rose growers, West Grove, Chester Co., Penn. Roses by mail a specialty, 1878. Without interfering with Roses, this firm

grows and sends by mail beautiful hardy ornamental flowering shrubs, Honeysuckles and climbing vines, fine Gladiolus and Lilies, and a few other choice plants. Their Roses, especially, have attained a national reputation for beauty and constant bloom, as well as for hardiness and vigor. Instructions are given by this house concerning Roses in open ground, Roses in pots, insect enemies, Roses in beds or masses, and winter protection of Roses.

"Wholesale Price List of Small Fruit Plants, etc.," for spring of 1878, grown and for sale at John S. Collins' Pleasant Valley Small Fruit Nursery, Moorestown, New Jersey. Established 1855. This firm received the Centennial Prize Medal and Diploma for best Wilson Early Blackberry and best Brandywine Raspberry. Fine plates of the Great American Early Prolific and Reliance Strawberries accompanying the Catalogue of Small Fruits.

"Circular and Price List for Spring of 1878." Strawberry, Raspberry, Currant, Gooseberry, and Blackberry plants etc., for sale by E. P. Roe, author of "A Manual on the Culture of Small Fruits, How to Raise and Market Them, etc." Mr. Roe especially recommends his new seedling Raspberries—Pride of the Hudson and Christine; seedling Gooseberries—Early Ruby and Late Emerald.

"Annual Circular and Retail Catalogue of Warranted Vegetables and Flower Seeds," January, 1878, grown and sold by James J. H. Gregory, Marblehead, Mass. Neatly illustrated.

"Address of the Hon. Marshall P. Wilder, at the Annual Meeting of the New England Historic, Genealogical Society, Jan. 2, 1878, and other Proceedings." This able address partakes of the same care, high talent, philan-

thropic views and worthy objects which always characterize all that emanates from the enlightened mind and warm heart of this venerable and universally respected gentleman.

William Rennie's "Seed Catalogue," neatly illustrated, 1878, of flower and vegetable seeds. Among the floral novelties are a species of *Salpiglossis*, a beautiful rich plant of varied colors, one to two feet high—half-hardy annual.

J. M. Thornburn & Co.'s "Annual Descriptive Catalogue of Seeds and Bulbs," for the Vegetable Garden, the Flower Garden, Lawn, Farm, and Nursery, 1878. Firm established in 1802. It offers every standard and improved variety and tested novelties. 15 John Street, New York. Among the collection, one of the largest in the world, is the *Penstemon cobœa*, rather rare in cultivation, with very large white flowers striped with purple lines, *Eryngium Leavenworthii*, the showiest of annuals, the heads are of a beautiful purple—a valuable addition to winter bouquets. It is considered one of the most valuable plants introduced in many years. Branches cut after the flowers and leaves have matured will last two or three months; *Ipomœa leptophylla*, found in the Platte and Canadian rivers, and on the table lands of Colorado, is very prolific in flowers, which are large, rose purple, and very showy.

"The Herald of Health," New York, 13 and 15 Laight Street; \$1 a year. It contains a paper on hygiene for farmers and mechanics, and also one on mental health, and another on the good effects of flowers on invalids, and an article on Potatoes for food.

WOODWARD'S GARDENS.

This is still a deservedly popular resort for thousands—especially on Sun-

days. The proprietor is ever improving them in some manner or other, either in a large or small way. When one considers the variety of the sights, and some of them extremely rare and antique, one does not wonder at the number of persons who are attracted there. On all sides are found curiosities from all parts of the world in mineralogy, botany, ichthyology, crustaceans, mollusks, insects, ornithology, and quadrupeds. In the language of a traveler from the East, writing to his friend: "In strolling over the grounds the eye falls upon parterres of the rarest exotics, while the melodies from aviaries of birds from every clime delight the ear. You can plunge into illuminated caverns filled with aquariums of fish of many kinds; you can recline on green, velvety slopes, shaded with grotesque trees from all quarters of the globe, while at your feet runs a winding, rippling stream over its rocky bed, and then forming a succession of cascades before it debouches into a pond, where boats are at the disposal of amateur oarsmen; you may behold various strata of rock of immense size piled up to imitate wild natural beauty, with dimples of hillocks wet with the spray of fountains, and fringed with trailing vines; you can step into an immense inclosure and take a look at the unsurpassed collection of wild, ravenous animals confined in cages, and, when prodded by their keepers, will startle you with their roaring; you can while away an hour in a concert room, where visitors are refreshed with beverages of all sorts and a band of music; or you can pass another hour in an amphitheatre, and become dazed with feats of zampillereostation and all sorts of wonderful performances." None should fail to visit this delightful resort.

THE CALIFORNIA FARMER.

We are very appropriately recommended by our genial and philanthropic contemporary—Mr. Warren, the veteran editor of the above-named, long-established and enlightened publication, in view of the “Giver of all good” dispensing so plentifully the late glorious rains upon our entire State, to shower our kindness and good deeds one upon another as tokens of our gratitude to Him who has emptied the skies above us so beneficently. In this same spirit does our friendly neighbor and co-worker speak of the CALIFORNIA HORTICULTURIST in a favorable judgment and manner, though tempered, doubtless, with a candid and honest criticism. And this, by the by, our kind friend has done several times before, and for which we now beg to return our thanks. Our co-operator in horticulture (for he makes this interest continually to occupy a large portion of the *Farmer*), refers to our two colored plates of the Japanese Persimmon and Reine Claude de Bavay Plum as being less perfect than he could wish, and not doing justice to these fruits. In answer to this, we desire to observe, that the form of the two kinds of Persimmons delineated in the frontispiece is, we have every reason to believe, correct, as the drawing was made from the natural fruits, as also their color; but we agree with our pleasant critic in their being imperfect, inasmuch as no shading was provided in their printed coloring, which makes their appearance and form extremely flat or unrounded. In regard to the Plum, we really think that the figure of the fruit and foliage are correct to nature, and the yellowish green color of the Plum, in most of the plates, equally naturally truthful, but probably Mr. Warren had a num-

ber of our work sent him which was defective, as some of them likely were in this respect, and which, of course, led him to suppose that all the plates of this fruit were equally in fault. Our long devoted patron of and writer on agriculture further kindly observes:

“We would wish our CALIFORNIA HORTICULTURIST should not be behind other magazines in the excellence of their illustrations; we are aware that these illustrations cost money, and if our gardeners and florists would but give a more liberal aid and patronage to our CALIFORNIA HORTICULTURIST, as they ought, we should then hope to see an illustrated magazine of the highest type, which is much wanted, whereby all the new and varied fruits and flowers of our ‘Golden Land’ could be heralded forth, and thus aid in making our State better known and more appreciated.”

In answer to this, we would say, that it is our intention to follow up these efforts in fruit and flower illustration in future as well as our public patronage will enable us to do, and in such case no pains will be neglected to make our plates and coloring as true to Nature’s form and colors as possible.

Mr. Warren further pleasantly observes in our support and favor:

“We know Messrs. Carmany & Co., the proprietors, and our earnest friend and contemporary, the editor, Mr. Hooper, work faithfully, but our gardeners, nurserymen, and florists we fear come far short of duty in earnestly and zealously sustaining a work that is so closely identified with their own profession and interests.

“Perhaps it can hardly be expected of those to whom we allude to do all their duty in this respect, when they are not united enough to establish and maintain a Horticultural Society, that

should be one of the most successful and prosperous in our whole Union : how singular it appears to horticulturists abroad to read and learn of our wonderful fruit crop and floral gems, and then learn we have no Horticultural Society. How long will this be?" [One has been lately formed at Los Angeles, but we certainly ought soon to resuscitate our own here in San Francisco.—Ed.]

FRUIT CULTIVATION AND REPORT OF FRUIT AND VEGETABLE MARKET.

The Pecan tree is an easy tree to raise from a nut, but hard to raise from transplanting, as it sends down a large tap root which has to be cut. Some think that a tree that has been transplanted is better than one that has been raised directly from the nut. A transplanted tree will bear earlier and is more prolific. It will send down a tap root and lateral roots, while a tree naturally has only a top root. The Butternut can be grown in this country, but it does not grow so readily from seed as the Black Walnut. It grows very slowly in this climate. The sun seems to affect it considerably. But we have noticed that at San Jose, at any rate, they seem to flourish very well. We have never, however, seen trees over four years old, and they were all comparatively dwarfs. They never, as far as we have observed on this slope, grow higher than about six feet. As to the Almond, as regards soil, it will succeed on almost any soil we have. It will do well on drier soil than any other tree, if it is on its own root, and if on a Peach root it will succeed where it is too dry for the Peach itself. We regard the Languedoc the only variety that is worthy of cultivation. We have many kinds of seedlings but we have never seen any one that

will compare with this variety. Mr. Meek, of San Lorenzo, has one of the finest orchards of the sort that we have ever seen. The Paper-shell Almond is comparatively worthless. The tree is scrubby, ugly, and crooked to begin with ; then it is not very prolific, and not only that, but the nuts are so soft-shelled that the birds destroy them all. There are risks in growing Almonds in the low flat valleys because of the spring frosts. Mr. Meek's orchard sometimes suffers from this cause. There is much less risk on the high lands than on the low lands ; in fact, there is very little risk on the high lands for this and some other fruits, as the Grape and the Apricot. The Almond tree is not more liable than any other tree to be injured by excessive water. They will stand more exposure, either wet or dry, than the Peach tree. The raising of the nut is very profitable, and is more and more destined as time rolls on to become a matter of importance to the State.

The growing of the American Chestnut has mostly failed on this coast. Still, we consider that there are localities in this State where it would flourish. It is said to thrive in the mountains, say in such an altitude as Dutch Flat in Tuolumne County. The Spanish and Italian Chestnuts undoubtedly succeed well here. We can not tell why the American Chestnut would not succeed, but think it is due to the presence of alkali in the soil, and the extreme heat of the sun. We have not, either, observed Hickory to do well here. We know some orchardists who have failed in growing it successfully. The Italian Chestnut does especially well in sandy soils, but not in low, alluvial soils.

Now is the time to give your fruit trees the pruning they may require,

either to give form or symmetry to the tree, a renewed vigor, or to induce fruitfulness. In most of our valleys or on the rolling hills where orchards have been planted, we are more or less subject to violent storms of winds at the change of the seasons, both in spring when the blossoms are setting, and in autumn before winter varieties have all ripened. It becomes a matter of prudence, then, to keep our newly-planted trees down so that they may form low heads, the branches being kept nearer the roots, the action of ascending and descending sap is more rapid, and the trunk of the tree becomes more stocky and able to resist the gales which blow off most of the fruit on those trained up in whip-stock fashion.

Another advantage of low pruning is, that the tree is kept in reach of the pruning knife, and when the tree comes into bearing, a great saving is made in gathering the fruit. But there is another reason in favor of low pruning more important than all others. The fruit growing season of the Pacific Coast is subject to an almost endless sunshine, and when the trunk and branches are exposed to its constant rays, the bark becomes dry, and vegetable action ceases on all those parts most exposed.

The effect is, a drying of the bark, causing it to adhere closely to the limb, premature decay is induced, the sap of the tree becomes poisoned, and what little fruit is produced will be blistered to a greater or less extent on account of the lack of leaves, and subject to the dry or bitter rot.

In our climate where trees of all kinds are so precocious in growth and fruit-bearing propensity, it is believed by many that they will prove to be comparatively short-lived. Should this

be realized, the distance of twenty-five feet, or even twenty feet, may be found sufficient for the production of the largest amount of fruit for the first fifteen years after planting.

There never was and never can be any fixed or exact rule in relation to distance in tree-planting, so much depends upon variety, habit of growth, kind and quality of soil, irrigated or unirrigated, lands to be constantly cultivated, or to be put to the growth of Cherry trees, with no other cultivation than perpetual grass, with the necessary moisture supplied from natural or artificial irrigation.

In the fruit and vegetable market since our last report up to the middle of January, prices continued about the same to the end of that month; at that time lighter shipments were coming in from Oregon, and Apples generally were in better condition than those received previously from the same quarter. As soon as the inferior sorts were disposed of, the consignments of Apples commanded better prices. Receipts of Los Angeles Oranges and Lemons came in daily, and there was a fair demand for the stock. Bananas from the Sandwich Islands came in in large quantities (1,500 bunches), and many of them which were thoroughly ripe were hawked about the streets in wagon loads at twenty-five cents per dozen, and four for ten cents. 10,000 Cocoanuts also arrived about the same time.

In the large annual sheet issued by the enterprising proprietors of the *Commercial Herald*, we find some very valuable and interesting statistics regarding the fruit crop of last year (1877) and to which we refer our readers with a very earnest and strong, but we think highly-deserved recommendation.

About the first week in the present

month (February) larger supplies of Bananas were brought from Honolulu. Limes nearly ceased from Mexico. California Lemons were arriving, commanding a fair price, and Oranges from the south, and a few from other parts of the State were in good demand, but at present they are not so sweet as the Mexican, of which there are still a quantity on hand. The wet weather checked the shipments of Apples from Oregon, but caused choice lots near at hand to be sold at an advance, though the stock was rather light.

We are indebted to Howe & Hall, Commission Merchants, for the following price list: Apples—Choice, \$1.25 to \$2.50 per box; common, 75c. to \$1 per box. Pears—Winter Nelis, choice, \$2.50 per box; E. Beurre, \$1 to \$1.50 per box. Cranberries, \$14 to \$15 per bbl. Oranges—California, \$12.50 to \$35 per M. Lemons—Sicily \$10 to \$11 per box; Los Angeles, \$15 to \$25 per M. Limes—Mexican, \$15 per M; California, \$5 to \$6 per box. Bananas, \$2.50 to \$5 per bunch. Pine Apples, \$8 to \$10 per dozen. Cocoanuts, \$8 to \$10 per 100. Dried Fruit—Apples, 4c. to 6c. per lb.; Peaches, 8c. to 9c. per lb.; Pears, 5c. to 8c. per lb.; Plums, 3c. to 4c. per lb.; pitted, 14c. to 16c. per lb.; Prunes, 12½c. to 15c. per lb.; Figs, White, 6c. to 8c. per lb.; Black, 4c. to 7c. per lb.; California Raisins, \$1 to \$2 per box; \$1.25 to \$2.25 per hf. box; \$1.50 to \$2.50 per qr. box; Blowers, \$1.75 per box. Vegetables—Cabbages, \$1 to \$1.12½ per ctl.; Marrowfat Squash, \$6 per ton; Green Peas, new crop, 18c. to 20c. per lb.; Chile Peppers, 7c. to 9c. per lb.; Garlic, ½c. to 1½c. per lb.; Okra, dry, 23c. per lb.; Cauliflower, 50c. to 75c. per dozen.

We have nothing of general interest to remark. Supplies of Malaga Raisins

are liberal, and with a good home stock—prices rule low. Currants, Prunes, etc., are in fair supply, but the very liberal home product interferes materially with their sale. California Oranges are coming in freely, and Apples in larger quantity than in the beginning of the month. The supply of vegetables fully meets the demand at present prices. Green Peas and Asparagus are not coming in very plentiful as yet. Brussels Sprouts and Artichokes are cheaper, and new Cabbage is making its appearance in the market. Sweet Potatoes are scarce and dearer.

ALFALFA.—A correspondent addresses an Eastern journal with regard to that "California invention," Alfalfa, and receives the following answer: Alfalfa is the South American Spaniard's name for that very old plant known in all English works on agriculture as Lucerne. It has been known and cultivated as a forage plant in Europe for at least twenty-five centuries, and in the United States almost since its first settlement by the whites. But Californians procured seed from Chile, and with it came the Spanish name, which has been adopted on the Pacific Coast in place of the older and more common one of Lucerne. It may be termed a giant species of Clover, as it belongs to the Leguminosæ or pulse family, which include the Peas, Vetches, and our common species of Clover.

PRODUCTS OF A SAN DIEGO GARDEN.—The San Diego *News* thus sums up the contents of a garden in that city, owned by a Mr. Bayley: A Guava tree, one and one-half years old, loaded with blossoms; a Sicily Lemon, five years old, eighteen inches in circumference, on which are a number of Lemons, one of which is one foot in circumference;

a Citron tree covered with blossoms; a Pumalo Orange, three years; one of the Oranges now hanging on it measures one foot four inches in circumference; a Tahiti Lemon in full bloom; an Orange seedling only four years old, fifteen feet high; a Pomegranate, two years old, this season bore twenty-four Pomegranates; a Chinese Lemon, three years old, hanging full of Lemons; a Nectarine, one year old, eight feet high; an Olive, three and a half years old, eighteen feet high; a Mandarin Orange, four years old, on which were over 400 blossoms a few weeks since. Besides these there are other varieties of Limes, a Turkish Fig tree, the White Asher Fig, Maltese Blood Orange, Japanese Persimmon, Peach, etc.

A PECULIAR GRAFT.—Quite a curiosity in grafting may be seen on Mr. Lewelling's place, in Alameda County. This graft blends into one tree five varieties of the Apple. The four base stocks were originally four independent trees, standing at the angles of a square, about four feet apart. The tops of these were inclined to each other, and united in a complex graft, after which interlacing branches were united by graft at each point of contact, forming, as it were, a perfect framework for an aboriginal wigwam. Upon the top, at the apex of this growing structure, another graft was set, which has grown to be a large, bearing tree. This skillful warping of nature was executed fifteen years ago by J. Lewelling, and is, perhaps, the most perfect specimen of complex grafting on this coast. It is quite a curiosity.—*Pacific Rural Press.*

THE IMPORTANCE OF PLANTING TREES.—It is a matter for much alarm, says the *San Jose Argus*, that the timber of this State is so rapidly disappearing, and it is a crime of the first magnitude that it

should be so wantonly destroyed. Leaving out of consideration the great commercial value of the timber thus destroyed, the effect of the loss upon our climate and our rainfall should be considered sufficient to warrant prompt means to stay the progressing annihilation of our forests. Our farmers might partially remedy this evil by planting trees upon their ranches, which will certainly, if it have no effect upon the future rainfall, prove very valuable in many ways. Thanks to our climate, a man does not have to plant trees here for the use of the fifth succeeding generation, but he may enjoy the fruits of his own labor. The trees can be planted without one dollar of injury to the agricultural products of the country, and we urge upon our farmers the advantages to be derived from a yearly addition to the timber of this valley.

ORANGE CULTURE.—On examining a fine lot of Oranges—nicer by far than any now in the San Francisco market—raised at Camanche, in Calaveras County, we are fully convinced that Southern California will not long have a monopoly of the Orange culture on this coast. The wonder is that our foothills are not covered with thousands of of these most beautiful trees, yielding their thousands of dollars worth of fruit. That they are not is owing to lack of enterprise, rather than of adaptation of soil, climate, etc. So far as the effort has been made to cultivate the Orange in the foothills results fully settle the question of adaptation. At Campo Seco, Camanche, Poverty Bar, and in fact in every place in the county where the experiment has been tried, Orange culture has proved a success. Frosts do not injure the tree after it has once got a fair start, and the flavor and size of the fruit will compare favorably with the best grown at Los Angeles.

LARGE POTATO CROP ON GRAND ISLAND.—Westgate Bros. of this place, in connection with A. T. Allender of Walker's Landing, raised on Grand Island this season the largest Potato crop it has ever been our lot to encounter. The field comprises some 400 acres of the best land on the island. They consumed 2,000 sacks for seed. The entire crop was ripe enough to dig and sack for the past month. There are at present seventy Chinamen engaged in digging and sacking. These are superintended by three white men. It requires teams to draw the sacked Potatoes to the river bank as fast as they are sacked. The crop so far has yielded an average of 85 sacks to the acre of fine, marketable Potatoes, besides over 100 tons of small Potatoes, fit for seed and feed. At the above rate of yield there will be a total of 34,000 sacks of large Potatoes and about 400 tons of small ones. By allowing 125 pounds as an average weight, there will be 4,250,000 pounds. The average price will probably be $1\frac{1}{4}$ cents per pound. At this rate the marketable Potatoes will produce an income of \$63,750. If the small Potatoes sell for \$10 per ton, there will be \$4,000 more to add to the gross receipts, making a total in all of \$67,750. They raised four different kinds of Potatoes, but the principal kind is the Humboldt Red. Early Rose comes next, and Peach Blows next. We have not heard of any crop which has paid any better than this, and it speaks well for our island during a dry season.—*Solano Republican*.

EFFECT OF FROST ON ORANGE AND LEMON TREES.—The *Napa Register* of Jan. 13th says: Notwithstanding the severity of the weather during last week, Orange trees at M. M. Estee's place, about four miles from Napa, in a north-

erly direction, were uninjured. Mr. Estee also had some Lemon trees, and although they were well protected by corn stalks, they could not withstand the heavy frosts, and were killed to the ground. The Orange trees were uprooted.

THE largest bunch of black Grapes ever known to have been grown was of the Gros Guillaume variety, weighed 23 lbs. 5 ozs., measured 2 feet in length and 22 feet around the shoulder, and was lately on view at a fruit store in Dublin.

METEOROLOGICAL RECORD.

FOR THE MONTH ENDING JANUARY 31st, 1878.

(Prepared for THE HORTICULTURIST by THOS. TENNENT, Mathematical Instrument and Chronometer-maker, No. 18 Market Street.)

BAROMETER.

Mean height at 9 A. M.	30.09 in.
do 12 M.	30.08
do 3 P. M.	30.07
do 6 P. M.	30.07
Highest point on the 19th at 12 M.	30.31
Lowest point on the 16th at 3 P. M.	29.56

THERMOMETER.

(With north exposure and free from reflected heat.)

Mean height at 9 A. M.	52°
do 12 M.	57°
do 3 P. M.	57°
do 6 P. M.	53°
Highest point on the 21st at 12 M.	62°
Lowest point on the 4th at 9 A. M.	43°

SELF-REGISTERING THERMOMETER.

Mean height during the night.	44°
Highest point at sunrise on the 22d.	50°
Lowest point at sunrise on the 3d and 4th.	34°

WINDS.

South and south-east on 20 days; north and north-east on 6 days; west on 3 days; south-west on 2 days.

WEATHER.

Clear on 10 days; cloudy on 15 days; variable on 6 days.

RAIN GAUGE.

	Inches.
6th	0.02
7th	0.49
8th	0.31
9th	0.14
10th	0.15
14th	0.91
15th	1.17
16th	2.06
18th	0.33
22d	1.06
24th	1.39
26th	0.02
27th	1.33
29th	0.34
30th	0.43
31st	0.54
Total	10.69
Previously reported	4.33
Total for the season	15.02



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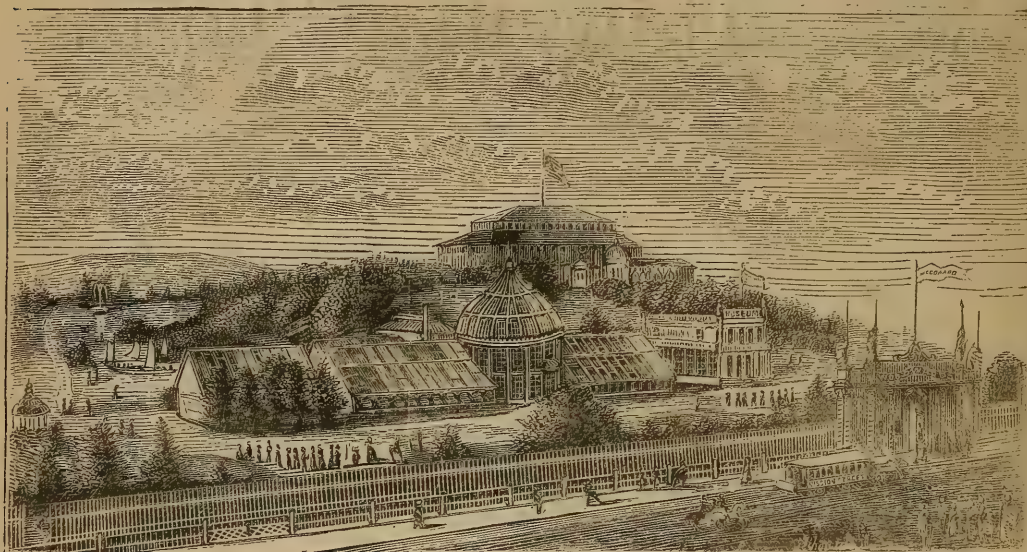
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THE

California Horticulturist

AND FLORAL MAGAZINE.

E. J. HOOPER, Editor.

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THE BEURRE D'AREMBERG.

THE

California Horticulturist

AND FLORAL MAGAZINE.

VOL. VIII.

SAN FRANCISCO, MARCH, 1878.

No. 3.

INSECTS INJURIOUS TO HOUSE PLANTS.

BY F. A. MILLER, OF THE EXOTIC GARDENS.

One of the most annoying evils in the cultivation of plants in the house or in the conservatory is the insect pest, and from year to year the evil seems to be on the increase. Throughout the year a great many inquiries are made at our nursery for remedies, but these in many cases do not seem to accomplish the desired result, until I have come to the conclusion that there is something totally wrong in the management of house plants, and that the application of remedies for the destruction of insects is of no avail, unless certain other necessary conditions are provided which are apt to check the spreading of insects. A few remarks may be of some interest to the readers of the HORTICULTURIST.

A difficulty in growing plants successfully arises very often from the attempt to grow too much of a variety of plants under the same conditions, when the requirements of temperature and moisture are so very different for different classes of plants. For instance, to place a *Camellia japonica* alongside of a *Zonale Geranium* must result in the

destruction of one or the other; the former requires a dry and sunny exposure, while the latter is best suited in a shady, cool, and moist situation. Again, to place an *Azalea* alongside of a *Cactus*, or a *Fuchsia* together with a *Caladium*, or a *Fern* together with an *Oleander*, or a *Pomegranate* together with a *Maranta*, must necessarily result in disappointment. Yet it is impossible for the amateur to provide separate apartments for the various plants which he desires to cultivate, and if he were compelled to confine himself to a very limited variety, best suited to existing accommodations, his interest and love for plant-growing would soon diminish. However, we are enabled, by judicious watering, airing, manipulating of soils, and shading, and by a careful arrangement of the plants as to sun or shade, exposure to or protection from currents of fresh air, to cultivate a very respectable number of varieties with gratifying success. How to make up such a collection we will consider some other time.

Insects attack, as a general rule, unhealthy, weak, and exhausted plants much quicker than they will a healthy and vigorous one, and if we expose a

plant to conditions unfavorable to its requirements, it will soon cease to thrive well, become weak and unhealthy, subject to the attacks of insects, which are encouraged by the very conditions so detrimental to the plant itself, and here is the very root of the evil. In our very dwellings, in clothes presses, trunks, and closets, insects will gain a march on us, if we do not adopt precautionary measures: cleanliness and proper ventilation will be sure preventatives.

One of our most popular plants in San Francisco, the Fuchsia, is hardly ever attacked by any insect, except scale, when growing in the open air, and scales infest this plant only when it has become old, and when it has outlived its usefulness. Experience of this kind should prompt us to replace very old and crippled plants by young and vigorous ones, and to renovate the soil, which is in an exhausted condition, at the same time. Place the Fuchsia under glass, or in a dry atmosphere of a room, it is at once subject to the attacks of all kinds of insects, unless the plant is kept in a constant and vigorous growing condition, which can readily be done by shifting into larger pots, when the roots become crowded, and by the application of liquid manure once or twice a month. Treating the Fuchsia in this way, it may be grown for two years under glass with good success, then it should be replaced by a young plant, which is readily propagated. This proceeding, however, is not applicable to all plants. Begonias and Primulas may be grown quite successfully under the same conditions; Cypress and Ferns under similar treatment may be kept in good condition for years, while Calceolarias and Cinerarias should be replaced by young plants every year. All of these

plants, with the exception of Primulas, should have frequent syringing, once or twice every day during bright and sunny days, morning and evening, and the house should be kept very airy from morning until evening, in fact, they would be very much benefited by giving air during nights when the weather permits. Now, while I am thoroughly convinced that preventatives are the best remedies as far as insect pests are concerned, these will sometimes make their appearance in spite of our precautions, and nothing is left for us to do, except to destroy them as effectually as possible.

The aphides (plant lice) are common pests, and prey mostly on the young and tender shoots of plants, sucking out the sap, which results in shriveling and discoloring the foliage. Of the aphides, the green fly and the woolly louse are the most common species. The best remedy for them is fumigation with tobacco smoke. To make the operation successful, the following hints should be followed: The best time for fumigating is late in the afternoon; first syringe the plants with clear water, then place tobacco stems or leaves of the cheapest kind in a vessel (a flower pot will do), with sufficient paper, or other combustible, to burn slow. The smoke should be allowed to become so dense that an object 3 or 4 feet distant can not be readily recognized. This operation should be begun as soon as these insects make their appearance, and should be repeated every 3 or 4 days until there is no sign left of them. Another syringing should be given on the morning following the fumigating. Unless the syringe is applied before fumigating, the foliage of Heliotrope and other tender and soft foliage may suffer severely from its effects. If plants are grown in a conservatory attached to a

dwelling, in which case the smell of tobacco smoke would be offensive, they should be removed into any small room in an outbuilding, where the fumigation may go on without inconvenience to any one.

(To be Continued.)

HORTICULTURAL GOSSIP.

BY CHAS. H. SHINN, AT NILES.

To-day has been spent in loosening the soil of the garden beds, which was packed hard by the long rains of this wet winter. This is an operation very necessary to the future well-being of each plant. The surface must be kept mellow. If the garden was spaded last fall, the only tools needed are a hoe, a rake, and a trowel. I have also found the "Excelsior Weeding Hook" perfectly splendid for using among small plants and tender bulbs, and I would not now be without it for ten times its cost. My *Arum dracunculoides* is coming up marvelously; soon its great palmate leaves will unfold, and finally its huge spotted flower, shaped like a giant *Calla Lily*. The Japan Lilies, *L. auratum*, *L. speciosum*, *alba*, *roseum*, and *rubra*, *L. nigra*, and others, are fairly above the ground, while the *L. Humboldtii*, gift of warm-hearted friend Drew of El Dorado, are showing their green tips gloriously. This thing of putting bulbs in the ground, and watching to see what happens, is a very delightful affair—except when the gophers appropriate the bulbs!

I had what Burnand would have called a "happy thought" to-day. Dear Editor, I want to advise every city-dweller, who can have no garden, to buy fifty mixed Crocuses, and put them in a box of earth, two inches apart; six Anemones, and put them four inches

apart; two Turkish *Ranunculus*, and put them eight inches apart. The lot will cost only \$1.70, and will bloom constantly for months. Hyacinths? Why, of course I have an affection for Hyacinths, and if you can afford it, have them too by all means.

In our climate the earlier part of winter, or, rather, of the rainy season, is outwardly a period of rest for all plants. I say "outwardly," because the plant probably begins to realize that a new growing season, with its cares, duties, and pleasures of blossoming, is near at hand; the cells begin to arrange for their sudden development of a few months later; the buds are sending telegraphic communications to the most distant rootlets, bidding them be ready for the rush and quiver of spring. Much of the blossoming power of our shrubs and herbaceous perennials will depend on the rest they have had before the rains come. Cacti, it is well known, should be dry through the autumn months to insure abundant bloom.

As soon as the leaves fall, the trimming of fruit trees, shrubs, roses, etc., should be done. Cut out all the unhealthy looking wood first, and clear the suckers away. Then stand off, and look at it; don't cut a branch without a reason; it is harder to put a limb in than to take it out; a symmetrical head, open enough to give every branch its healthy development, is what you desire. I notice, in nine-tenths of the pruning done in gardens, that too many large limbs are cut off, and there is too little thinning out of the small twigs. Pruning is about the last thing to intrust to an ignorant laborer. Let him dig up your *Oxalis*, walk over your Pansies, mix your labels, and eat your early Radishes—but keep the pruning shears from his bungling hand!

The garden loves the rain better than our artificial waterings; the warm drops soak into the ground, and ask the little rootlets to adopt them, and change them into leaf and blossom, or, best of all, into fruit and seed. The little rootlets, away down in their still home, telegraph back to the leaf buds overhead, "Is it time?" and the brown, scaly buds answer, in sweet iteration: "O, yes, it is; yes, it is!" Then the rootlets gather food for the buds, and the buds blossom for the rootlets, and both are happy together, in their own unconscious way.

The charms of our Californian winter so suddenly full of growth, waves of green, hints of rose and purple in countless buds, beginnings of song from the thickets where robins and thrushes gather—all these derive their exquisite surprises from the long months of the fall, which made every root and bud impatient for the swift, coaxing rain. I take pleasure, at this season, in cutting a piece of sod, a few inches square from any mountain slope, and studying the dozens of little plants beginning the struggle of existence. Representatives of a dozen species will often be found on that hand's-breadth, and they are all growing with immense zeal.

Our winter, which is but a rainy Eastern June! The Gillias, Bee Larkspurs, Escholtzias, Limnethes, and Dodecatheons, called, by some, American Cowslips, are covering all the slopes, and preparing to blossom; in shady places the Columbine's dark leaves mingle with the wild Parsley, and with the delicate volutes of uncoiling Ferns; the grass clothes the naked places, and the fissures of the weather-beaten rocks. And, in our mountain regions—my memory quickens as I write—the miles of Manzanita wake, and bud, and blossom, by deserted

mines, and on windy heights, shaking their royal and tinted cups in lavish grace upon the ground, till all the slopes are white with drifts of fragrant snow.

In the deep, still hollows of the coast ravines I know that the Rhododendrons begin to waken. O, what secrets of peace they hold; what surprises they have for those who love them best. One golden spring, on the quiet Novarro River, we tied our boat, and crept through the Salmon-berry bushes, and under the boughs of odorous redwood, until we found a place where half the sunlight came through the white and purple flowers of the saintly Rhododendrons. It seemed to be the shrine of the templed woods, and we held our breaths with trembling delight; we saw a blue patch of sky, and a loop of river, but all else was shut out by the walls of redwood, and we were happy children again. I do not wonder that men hide themselves in unpeopled wastes to learn Nature's lesson. John Muir, in his Yosemite, watching the blessed birds of the waterfalls, is a happy, untrammelled man. Would that we all did the best we could to get acquainted with our brown, honest earth. The busiest of merchants can find time occasionally to cross the bay, climb the hills, and roll their cares out of sight.

I confess, with a little terror of rebuke from some "Dahlia man," that I love the beautiful and neglected wild flowers of our State far more than most of the old garden favorites. We have species here which are the pride and charm of European gardens, used there for masses, ribbon beds, edgings, and shrubberies—here used only under protest. In the eyes of botanists, our flora is wonderful in character and variety. In the judgment of cultivated people, we possess delicate flowers, unsurpass-

ed, in form, color, and fragrance, by those of any other region. Our Larkspurs and Columbines are superior to the old varieties; our Lilies outrival Japan; some of our species are unique, and all are beautiful. Let us plant more wild flowers in the garden with our Roses and our Pansies.

YOUNG VS. OLD PLANTS.

BY W. C. L. DREW.

"Every plant has its day." In the life of every plant there occurs a period when the height of its development and beauty has been attained. This period occurs sooner in flowering plants than in others. Forward from this time the plant becomes less beautiful, until, finally, its system is so deteriorated that death follows. For either potting or bedding it is always advisable to use young and vigorous plants; especially in pot culture is it better to start plants from seeds or cuttings in preference to using old plants, which are nearly always too large to maintain a healthy growth after being repotted, whereas if young plants are used, they will be characterized by a new growth of roots and branches, thus stimulating them with the vigor of life and health.

We earnestly advise all our California amateurs, and, for that matter, the skilled florist, to use young plants for both house and out-door culture, as they are always increasing in vigor and beauty until they have showered on us their wealth of blossoms.

An illustration may be advisable to point out clearly the truth of these assertions: I usually have a number of old Fuchsias, that is, plants which did admirable service in the past season—these with all the petting and coaxing will furnish very few blooms, while young plants from slips will be loaded

down with their parti-colored jewels, clearly showing the advantage of raising young plants. But, questions the young novice in the flower garden, "How am I to secure young plants of varieties that require to be propagated from slips?" The operation of raising plants in this way is simple, and can be performed successfully even by the most inexperienced with a little care.

Take a box about two feet each way and six inches deep—pots may be used if they are at hand—fill this with three parts clean sand and one part very light, moderately rich loam. Prepare your cuttings or slips about four inches long, having, if possible, a heel at the slipped end; this is a piece of the bark and wood of the old plant, which comes off with a slip when it is detached by slipping instead of cutting from the parent plant. If the slip has not a heel as above, there should be a joint or bud within half an inch of the end, plunge the slip into the sand and soil about three inches deep, leaving from one-half to two inches of the cutting above the surface, pack the soil well around the stem, moisten the soil well, and set in the sun; the soil must never be suffered to get dry or you will lose the entire lot.

After the cuttings have struck roots, they should be carefully transplanted into pots or larger boxes; if into pots plant them in three or four-inch pots, putting only one plant in each pot; if into boxes, set the plants five or six inches apart in the box; the soil should be a very fine, rich mold or loam of a nature which will not bake hard.

Cuttings should be struck in September for plants desired to bloom during winter or early spring; for plants desired for summer blooming, or bedding purposes, strike the cuttings in February or March. During spring

propagating it will be necessary to use a cold frame, setting the boxes therein.

As to starting plants from seeds, everyone knows, or should know, how to do it. All the finer seed, such as those of *Calceolaria*, *Cineraria*, *Clianthus*, *Begonia*, *Auriculà*, and all greenhouse plants have to be sown in a moderately warm hot-bed. The seed of many of these are very fine, and should be sown merely on the surface of the soil, pressing the surface with a planed board so as to settle the seed. I always keep a wet cloth over the surface of the soil, whether it be in hot-bed, cold frame, or seed bed, with the best of success. Try it. Plants from seed do not bloom so early as from cuttings.

We hope all amateurs will cultivate young stock, and remember "every plant has its day."

CULTURE OF PLANTS IN POTS.

BY AN AMATEUR.

American travelers who visit the floral exhibitions in England and witness the magnificent display of plants and flowers contributed there by the best gardening talent, are apt to turn away with feelings of disappointment from the generally comparatively much inferior exhibitions of similar objects in this country; unless our far superior display of fruits and other useful products more than counterbalance deficiencies in other respects, for it is admitted by all who have had the opportunity of making these comparisons, that we can greatly outstrip, especially in California, European fairs in the production of fruits and vegetables, either in regard to variety, size, quantity, or even, mostly, quality; but in the ornamental department, more especially in perfect specimens of plants displaying superior skill of cultivation un-

der artificial treatment, we have certainly much room for improvement.

To maintain a collection of plants in vigorous and healthy condition in pots, is no mean criterion of the cultivator's ability; and we further consider that these plants, natives of various regions and climates, are placed nearly in one common temperature, and grown in a small portion of soil contained in the limited space of a pot, where all their wants must be artificially supplied, it will readily be perceived that a perfect knowledge of the laws which govern vegetation is indispensable to their management. Combined with this knowledge, the cultivator must have foresight to see the *rationale* of his operations, and an aptness of application of the various adjuncts of cultivation, which only continual observation and considerable experience can supply. The elements of vegetable growth, and the relation they bear to each other being fully understood, he can control their action, so as to insure various developments conducive to the purposes he has in view.

That the plants exhibited at our public exhibitions are inferior, in point of high culture, to those already mentioned in Europe, does not proceed as much from scarcity of talent on the part of our practical florists, as from a want of due rewards and encouragement on the part of horticultural societies or other institutions—the Mechanics' Institute, for example—although we are pleased to admit that last year, at the exhibition of the latter, a better era was initiated in this respect, as the few prizes given were respectable moneyed premiums, although still more deficient than they should have been.

Of all the agents of vegetation light is the principal—it is, in fact, the life-sustaining property; all other require-

ments may be secured, but in the absence of sufficient light no healthy growth can be made. The effects of continued darkness upon all growing plants are familiar to every one. Leaves may be looked upon as the feeding points of the branches, as the spongi-oles are of the roots. All matter drawn by the roots for nourishment undergoes a transposition in the leaves. The processes of decomposition and elaboration in the leaves is due to the action of light; it is the mainspring of vegetable action, the power that operates the whole.

It will be readily understood, therefore, that in cultivating greenhouse plants, the form and construction of the house will materially affect success. Single-roofed houses, with opaque backs, are not fit to produce fine specimens, according to the interpretation of that term by practical gardeners. One-sided houses are productive of one-sided plants. We may occasionally see some one enthusiastic in plant growing elevating his embryo specimens on temporary platforms, with a view to securing "light on all sides," but although his attempts may be followed with success while the plants are small, large plants can not be preserved in that healthful symmetry of growth when the light reaches them only on one side.

For all purposes of plant culture double or span-roofed houses are decidedly superior, and the lighter the materials composing the structure, the better. Heavy rafters and huge cornices must not be admitted, and nothing of an opaque character used, further than to secure the requisite strength. The majority of plant-houses are faulty in this respect, the material with which they are constructed being unnecessarily heavy, and cumbrous, at once adding

to the cost and diminishing the usefulness of the building.

The intelligent floriculturist looks upon soil merely as affording support to the plants, as a medium of conveying nourishment, and where the roots have presented to them the various gases from which they derive their principal nourishment. Viewing it in this light, he is careful that the soil employed is of a character to offer no resistance to the presence of these gases. His scientific knowledge teaches him that plants derive most of their food from air and water. When we consider the source from which plants receive their principal nourishment, and their mode of feeding, the advantages of a fibry soil, such as is afforded by English peat, is readily apparent. To be available for the use of vegetation, a soil must not only possess all the ingredients of fertility, in a chemical sense, but its physical condition must also be of a nature to allow a free admission of air to all its parts, as well as to admit the free extension and ramification of roots. Fibry soil presents all these conditions in an eminent degree.

The superiority of peat as applied to pot culture of plants consists in its organic characteristics; a soil rich in decomposing vegetable fibre is, therefore, the great desideratum, no matter whether it is termed peat or sod, and as we can not conveniently procure the former, we must be content with the latter, which, as a substitute, is of equal value. We are aware that this assertion has been questioned by some, but experience has proved its truthfulness, and our most successful plant growers can corroborate the fact. Henceforth, let there be no more lamentation about the want of peat, while a superior article is plentiful in almost every pasture,

field, or common, and no longer attribute the scarcity of the most desirable plants, either rare or otherwise, of any kind in our greenhouses or grounds to the want of proper soil for their cultivation, or for the production of specimen plants, whose general appearance is that of a large globe or balloon covered with flowers, and set in a very small pot.

DIOSPYROS KAKI AGAIN.

BY JAS. SHINN, NILES.

I was much interested in an article in the last number of the *Rural Press* concerning the Japan Persimmon, its history, its varieties, and the methods used in Japan to perfectly ripen the fruit. Had the writer of that article confined himself to a recommendation of varieties with which he himself is acquainted, without an effort to disparage varieties imported and "advertised" by others, who may have equal facilities with himself for securing the best, I should not have felt called upon to notice the article, which is valuable for its general information.

The writer of the article to which I allude has, on several occasions, gone out of his way to inform the public that "there is no such variety as is advertised as seedless." Again, "the so-called seedless variety, advertised here, is undoubtedly a mistake." Now, the firm with which I am connected in the business of growing and selling trees has imported a variety of the *Diospyros* which was selected by a very careful and competent person from a noted nursery near Kioto, and named by the grower "Seedless." We also made a second importation of several varieties of grafted trees from the neighborhood of Yokohama. The grower of these last is a very intelligent man, and was

a considerable exhibitor at the National Centennial. He sent us with his invoice of trees a cluster of drawings of several named varieties of the Persimmon. Among these one is named "Seedless." This gardener names several others which he calls best. It so happens, however, that he does not mention one of the varieties which your correspondent names as "best." Perhaps this circumstance may be explained by the fact, as stated by Mr. Loomis, that in Japan "the names change with different localities." This hypothesis is strengthened by the fact that the variety which our Japan growers call "Seedless" Mr. L. calls Imperial; also, it may be remarked, that several other varieties which we import, as "Ahmong," "Die Die Mauru," and others, seem to be the exact counterpart of those known to Mr. L. by other names.

As further bearing upon this point, it is worthy of mention that for years we have imported from Japan the Persimmon seed. We always ordered seed from the best varieties, and always received seed labeled "Hachaya" and "Ahmong," as the two best varieties known in the markets. And when we find this opinion as to quality sustained by the gardeners who graft and grow the trees, we feel confidence in the correctness of our nomenclature.

In conclusion allow me to say that, in my opinion, the introduction of this new fruit will prove a real and valuable acquisition, and all who have been instrumental in disseminating it among our people are entitled to thanks. The trees will soon be in bearing all over the State, and we can then select the varieties that best suit our climate or our tastes. I rejoice in an honorable competition in this as in all pursuits, and should not have asked room for

these strictures if it had not seemed needful in self defense. We are pioneers in the work of introducing this tree into the State, we give our best efforts to procure the best varieties; we disparage no others, and don't care to be ourselves disparaged, even incidentally.—*Pacific Press.*

GREENHOUSE PESTS.

Having been addressed lately by a correspondent in this city concerning insect troubles in his conservatory, we take the following from *Moore's Rural New Yorker*:

Green flies are extremely troublesome to most soft-wooded plants, as Pelargoniums, Pinks, Heliotropes, Primroses, and the like, as well as to the young and growing points and flower-buds of Roses, Bouvardias, Fuchsias, etc., and how to effectually rid ourselves of this pest, is a desideratum. I commend simplicity and energetic application—washing with soap and water and a sponge. Gardeners fumigate their greenhouses with tobacco trash to kill green fly, and amateurs sometimes try it, too, and scorch their plants; hence, I advise ladies and others having a few window plants, not to fumigate them. Neither use whale-oil soap nor any other preparation whatever, because it will do little or no good, but, perhaps, much evil. Take the fly-infested plant to the sink, then lay it on its side, so that the pot may rest on the wood-work and the crops or plant be over the sink; then place a basin of clean water softened by common soap, under the crops, and with a sponge and plenty of water, remove every intruder. Turn the plant over and over, till it is certain not a fly is left, and if this washing be done carefully, calmly, and earnestly, only the work of

a minute, it is thoroughly effective and in no way deleterious to the plant. Now that the plant is clean, place it aside, away from the unclean, and take the rest, one by one, and wash them in the same way.

Don't turn on the water and hold the plant under the tap; that is a clumsy, injurious, and ineffectual plan. Neither use your hands as if a cat went a-fishing—afraid to wet your fingers; but roll up your sleeves and go to work with an energy worthy the cause, and in ten minutes you will accomplish as much and better work than you can in an hour by either the tap or clean-fingered policy.

If the plants be infested with scale, the sponge will erase them from the leaves, and a sharp-sided piece of wood or the back of a knife may be used to scrape them off the stems and branches, and a sharp-pointed—with the point a little dull, so as not to scratch—stick to fetch the tenacious vermin out of crevices in the bark and elsewhere, leaf-axils, and about buds. Use the sponge after the scraper. If there be any big brown scales that look dry, and from which, when you displace them, a shower of dust or “meal” (eggs) is scattered, be sure to remove these with the fingers so carefully as not to drop or disseminate an egg, and squeeze all out of existence between your finger and thumb.

Thrips are little black insects that suck the life-blood of plants, and do more mischief in a week than the same number of any other “lice” will do in a month. They breed innumerable and in little colonies on the under sides of the leaves. The young ones are green and yellowish-green. Gardeners fumigate them to death, or dip the infested plants in water impregnated with whale-oil soap and tobacco-water. If the mix-

ture be not too strong and the plants be syringed with or dipped in clean water immediately afterwards, the cure is good, and no evil is done; but if the mixture be too strong, then the leaves suffer as if they were seared or blighted. Therefore, for window-plants, I must recommend for thrips what I do for green-fly—washing with soap and water and sponge. At the sink this washing is good enough, but in the greenhouse it won't do, as many thrips would escape to propagate their species and perpetuate their work. Consequently, I would recommend in the case of greenhouses, where dipping or fumigating is not practiced, to bruise to death with the fingers every thrip that can be seen, and wash after bruising. When fully matured, they are such hard little customers that the sponge won't kill the half of them.

Mealy bugs are known at a glance, and the washing method is the cure for them also. But I must advise that all their nests of eggs be squeezed between the fingers, so that none escape. The mealy bugs often secrete themselves about the leaf-axils, flower-heads, growing-points, or any interstice that may occur between the root and apex; and if there be any stakes or strings used, bugs will be there if they be anywhere. Then the stakes and tiers should be removed and replaced by new ones. The sponge can not unearth the bugs, when they get into crevices and between flower leaves, and "down the throat" of some growing leaves, and then a bug-brush is necessary. A piece of stick like a pencil, with some hair wired to it in brush-fashion, is all that is necessary. A little paint-brush is not of much account—the hair is too soft. We want something stiff, like the hair of an old sweeping or hand-brush, to ferret the vermin out of their holes.

Tobacco smoke has no effect on them. Diluted kerosene or alcohol is certain death to those it reaches, and in the case of Cactuses, etc., where neither sponge nor brush can sometimes reach the invaders, these liquids may be beneficially used; but for anything else, I denounce their adoption as slow work, and in unpracticed hands, also most dangerous work.

Red spiders are most minute and destructive insects that increase multitudinously, and voraciously attack Abutilons, Roses, Smilax, and some other plants, and are usually the result of failing health or a dry atmosphere. The cure is repeated spongings; and the prevention is occasional spongings, frequent syringings, and vigorous plant growth. Gardeners apply powdered sulphur painted on the hot water pipes or on boards, slates, or walls facing the sun—but inside the greenhouse, of course—to help to destroy this pest, but woe to plants and insects alike if the pipes get much more than milk-warm.

Now, supposing all our plants are newly washed and perfectly clean; let the pots be washed too, and any green stuff on the surface of the earth they contain be removed, and drooping branches neatly staked and tied; then, after washing the window-sill or stand, replace our plants in position, and we shall be pleased with our hour or half-hour's work.

Wage a vigorous war on these pests, and they will be less troublesome in coming months. Fumigating, dipping in tobacco water, or sprinkling with tobacco powder are destructive to green fly and young thrips; but if there be only a few plants to clean, wash them with soap and water and a sponge; it is the safest plan. With a sponge and small hair brush erase mealy bugs.

The plants infested with red spider should be sponged twice a week till the insects are assuredly eradicated. Kill every wood-louse found about the pots, and show no mercy to worms.—*Cambridge Botanical Gardens.*

EXPERIMENTS WITH AMMONIA AND FLOWERS.

A French journal states that Professor Gobba has lately made a series of experiments for the purpose of determining the changes which ammonia produces in the colors of different flowers. For this purpose he merely makes use of a dish in which is poured a small quantity of common aqua ammonia. Over this he places a funnel, in the tube of which are inserted the flowers to be experimented upon. In this way he has shown that blue, violet, and purple flowers change to a beautiful green; deep red carmine flowers to black, white to yellow, etc. These changes are most striking when the flowers have several different tints, in which the red lines are turned green, the white yellow, etc. An interesting example is that of the Fuchsias, with white and red flowers, which in consequence of the ammonia vapor become yellow, blue, and green. If, when these changes have taken place, the flowers are immersed in pure water, they preserve their new colors for several hours, after which they gradually resume their original tints. Another observation due to Dr. Gobba is that the flowers of the Asters, which are naturally inodorous, acquire a very agreeable perfume under the influence of ammonia. The flowers of the violet Asters also become red when they are moistened with a diluted solution of nitric acid. Again, these same flowers, if exposed in an open box to the vapor of hydrochloric acid, become after some

hours of a beautiful carmine red, which they preserve, after being dried in the dark, if kept in a dry, dark place. Our readers may like to try some of these experiments.

THE AGE OF TREES.—The longevity of various trees has been stated to be in round numbers, as follows: Deciduous Cypress, 6,000 years; Boabab tree of Senegal, 5,000; Dragon's Blood tree, 4,000 years; Yew, 3,000; Cedar of Lebanon, 3,000; Olive, 2,500; Oak, 1,600; Orange, 1,500; Oriental Plane, 1,200; Cabbage Palm, 700; Lime, 600; Ivy, 600; Ash, 400; Cocoanut Palm, 300; Date Palm, 300; Larch, 300; Pear, 300; Apple, 200 years. The Brazil¹ Vine Palm arrives at the age of 150 years; the Scotch Fir gets its growth in about 100 years, and the Balm of Gilead in about 50 years.

LILIUM HUMBOLDTII.—This beautiful Californian Lily has already produced numerous varieties in the hands of the Dutch culturists. Messrs. Krelage already announce seven named and distinct varieties.

A PARISIAN has discovered a new use for jute fibre. Woven in textile fabrics this material produces fine effects of light and color. It takes dye readily, and on a simple fabric may be so arranged as to imitate velvet in relief patterns.

THE UMBRELLA PINE.—President Clark of the Agricultural College, Amherst, when in Japan arranged for some seeds of the Umbrella Pine, a large tree extensively used for ornamenting grounds around Japanese temples, and which do not produce seeds until it is 100 years old. The seeds cost \$1 a piece, and are now on their way to this country.

protection of our fish, otherwise the appropriation of funds for fish propagation and acclimatization is a waste of money. The State Fish Commissioners have done a great work with the very limited means at their disposal, having increased the take of salmon last season by considerably over a million fish, but unless the close season is extended and strictly enforced, it is beyond question that their efforts will be neutralized by the fishermen. The Commissioners state, in their biennial report, that since the organization of the Commission, they have placed 8,350,000 young salmon in the streams of the State. From 6,000,000 to 10,000,000 eggs are hatched annually in the McCloud River by artificial means. Careful observation has shown that of the eggs naturally deposited on the gravel banks of rivers, not more than 8 per cent. are hatched, while fully 95 per cent. are hatched by artificial process. Owing to the absence of a close season, overfishing on the Columbia River has had the effect of greatly diminishing the natural supply of salmon, and the canning companies of Oregon have subscribed \$25,000, which has been placed at the disposal of Livingston Stone to be expended by him in artificial hatching and restocking the river. This fact proves the necessity for a strict fish conservancy of California rivers. The whole run of seed salmon passes up the river during August and October. It is of the utmost importance, therefore, that the fish should be protected during the spawning season, and if necessary a river patrol should be established. This valuable food fish and article of export should not be diminished in the least quantity for the sake of gratifying the cupidity of a few fishermen. The Chinese and Italian fishermen use nets with finer meshes

than the law allows, and young fish are caught in large quantities by the fishermen, dried, and exported to China. This wholesale destruction of food fish should be prevented. A few stern examples would have a salutary effect upon the great body of fishermen, who would derive more profit were a close season enforced. In this connection we may also refer to the wanton destruction of whitefish in Lake Tahoe, to which allusion was made in the *Post* a few days ago. These fish are coming to the shoal banks to spawn the first season, and are there netted and sent to the Virginia City market. This is a gross outrage, and a heavy penalty should be inflicted upon the culprits. In addition to Lake Tahoe, the Fish Commissioners have likewise stocked Donner Lake, Sereno, and other lakes near the Summit with whitefish; also Clear Lake and Tulare Lake. It is believed the fish have lived in Clear and Tulare lakes, as well as in Lake Tahoe, but they should be strictly protected for several years. The last consignment of whitefish eggs from the East having been destroyed in transit, the Commissioners have written and duplicated their order, thus displaying great interest in their work. Their services, which are given gratuitously, accompanied by considerable private expenditure as well, should entitle their opinion to consideration by the Legislature, which is now considering this question. The whole community is interested in it, and we trust that Senators and Assemblymen who have large fishing constituencies will remember that the citizens of California at large have some rights in the premises which it would be well to respect.—*Evening Post*.

A Kern County man has a ten acre patch of mignonette for a bee pasture.

THE CHINESE AND OUR FISH.

We were shown a short time since a sample of the nets used by the Chinese in taking fish from our bay. The legal seine to which all fishermen are restricted is required to be one and one-half inches between each knot, thus allowing the small fry to escape and go free until they attain sufficient growth to be of use as food. The Chinese net is like nothing so much as that article which some years ago was a popular head-dress, and used by ladies to confine their chignons or their hair, only it is thicker and coarser, and of course stronger, but the meshes are scarcely one-eighth of an inch apart. Our informant also brought with him an envelope full of samples of fish which are daily destroyed in these nets. They consisted mainly of young smelt, perch, rock-cod, and flounders, from one to two inches in length. When it is stated that there are admittedly over 300 stake nets between Hunter's Point and San Mateo, and from 25 to 30 boats constantly engaged in manipulating them, it is not to be wondered at that not a single smelt has been caught this year off Long Bridge, and the fishing at Mission Creek now exists only in name. The Chinese fishermen spare nothing. The smallest crab, as big as a ten-cent-piece, is fed to ducks and chickens, while hundreds of bushels of small fry are daily ground up by them (after being dried), into a species of flour which they ship to China, where it is made into a kind of sauce which is highly esteemed there. There are four or five colonies or rancheries of Chinamen in the district referred to which is by no means the most thickly patronized by these poachers. All along the shores of Marin County, from San Quentin Point to Black Point and No-

vato Creek they swarm, and are surely and steadily emptying our formerly prolific bay of its once numerous fish. Six years ago a party of three fishermen could go out to Red Rock, to Saucelito, or other points on the bay, and return at night with more than they could carry. To-day, when the moon and tides are right, a dozen small rock-cod is a good day's sport. The Chinese are not the only guilty ones, for the Italians also use very small nets, and are guilty of destroying thousands of small fish, which they leave on the beach, a prey to the sea-gulls; but they are less to blame, because they are willing to stop it if the Chinese can be also compelled to use legal seines. A special officer recently made two arrests of Chinese fishermen, at one time taking in four and at another time five; but they all put up \$10 bail, which they forfeited, and the officer got nothing for his pains, as he failed to secure the conviction. By law the officer gets one-third of the fine and two-thirds go to the school fund and the District Attorney; but John thinks nothing of forfeiting \$10, and goes to work again to make it up at once. Another cause of destruction to fish, is the floating tar from our gas houses, a substance particularly poisonous to the finny tribe. The Fisheries Commission is to meet again shortly at Sacramento, by which time we hope to have some very important facts taken from personal observation to submit for their consideration.—*Evening Post.*

THE SPORTSMAN'S CLUB.

This patriotic and recreative institution is composed of nearly 300 of the best of our citizens. Not all ardent followers of the fields and streams, but many of its members joined the Associ-

ation with a view to benefit the people of California in the passing of just and adequate laws for the protection of fish and all animals in our State which they consider to be embraced under the character and denomination of game. They desire to have such laws passed, as will, in process of time, cause game to be abundant and at such a price in the markets as will bring fish and game within the reach of even the poorest of our population. This Club does not deserve the stigma which has been cast upon it by some speakers and writers, that it has in view merely its own interests and pleasures. On the contrary, it has not its own shooting and fishing alone in view, but it wishes to protect fish and game *pro bono publico*. The price of game in the markets, especially salmon, is so high now (it being thirty cents per pound), that it is a luxury that can be enjoyed only by the rich. The old law, with a few judicious amendments, will answer well, if people interested (and all possess rights in this regard), will attend to its provisions being duly observed. Unfortunately, almost every man and boy in the country districts imagines that he has a right (or, at any rate, disregards the law that restrains him), to shoot and fish all the year round. These persons cannot, it seems, be made to consider that by restricting their sport within certain times and seasons, to cause game to be more plentiful, they are promoting their own future welfare and amusements. Nothing but time and considerable perseverance in prosecuting offenders of this kind, and having the fines more than double what they are at present, giving the informer at least half of them, will bring these country people to their proper senses. Neighbors are not apt to inform on each other, and therefore it would appear desirable

that parties should be appointed by the Club to take this matter in hand if possible.

We fully agree with a late writer in the *Pacific Life* that the canneries should be made by law to pay a license to a large amount "to go into the Fish Commissioner's Fund, and be expended in replacing the fish they consume so greatly in excess of the ordinary citizen." The Indians should also be made to come under the law, as times have changed since they led an entirely wild life. We have always also been in favor of a repeal of the law for the protection of seals. Their consumption of fish is undoubtedly enormous. Some have asserted they are not quick enough in their movements to catch the swiftest salmon. But Captain Scammon, in his admirable work on "The Marine Mammals of the Western Coast of North America," from his close observation of the habits of seals, states that they are sufficiently speedy in their swimming powers to overtake any game fish in the world, and that they live almost exclusively on fish. We hope the Legislature will regard the interests of the majority rather than those of the minority in this matter.

A contributor to *The Pacific Life*, a few weeks ago, says: "It is estimated, and considered a moderate estimate, too, that the consumption of fish in our bay by seals amounts to ten tons per diem, one-half at least being salmon, which they greatly prefer (thereby evincing their appreciation of the best.) It is, therefore, safe to say that the consumption of salmon by the seals is five tons per day, which, at ten cents (a low estimate when thirty cents is the market price), amounts to \$1,000 per day. Query—Can the State afford to keep a sea-lion boarding-house at that expense? Let the law be repealed pro-

tecting such a destructive element. We will venture to say that geese and squirrels combined are not equally destructive."

FISHING IN CANADA.

On Friday we made an excursion to Great Lake, Jacques Cartier paddling and poling up the river in the rude box-boat. It was a bright, still morning after the rain, and everything had a new, fresh appearance. Expectation was ever on tiptoe as each turn in the river opened a new prospect before us. How wild, and shaggy, and silent it was! What fascinating pools, what tempting stretches of trout-haunted water! Now and then we could catch a glimpse of long black shadows starting away from the boat and shooting through the sunlit depths. But no sound or motion on shore was heard or seen. Near the lake we came to a long shallow rapid, when we pulled off our shoes and stockings and with our pants rolled above our knees, towed the boat up it, wincing and cringing amid the sharp, slippery stones. With benumbed feet and legs we reached the still water that forms the stem of the lake, and presently saw the arms of the wilderness opened and the long deep blue expanse in their embrace. We rested and bathed, and gladdened our eyes with the singularly beautiful prospect. The shadows of summer clouds were slowly creeping up and down the sides of the mountains that hemmed it in. On the far eastern shore near the head, banks of what was doubtless white sand shone dimly in the sun, and the illusion that there was a town nestled there haunted my mind constantly. It was like a section of the Hudson below the Highlands, except that these waters were bluer and colder, and these shores darker than even those Hendrick first

looked upon; but surely, one felt, a steamer will round that point presently, or a sail drift into view! We paddled a mile or more up the east shore, then across to the west, and found such pleasure in simply gazing upon the scene that our rods were quite neglected. We did some casting after a while, but no fish of any consequence rose till we were in the outlet again, when they responded so freely that the "disgust of trout" (they were more after salmon) was soon upon us.

At the rapids, on our return, as I was standing to my knees in the swift, cold current and casting into a deep hole behind a huge bowlder that rose four or five feet above the water amid-stream, two trout, one of them a large one, took my flies and finding the fish and the current united too strong for my tackle, I sought to gain the top of the bowlder, in which attempt I got wet to my middle and lost my fish. After I had gained the rock I could not get away again with my clothes or without swimming; which, to say nothing of wet garments the rest of the way home, I did not like to do amid those rocks and swift currents; so, after a vain attempt to communicate with my companion above the roar of the water, I removed my clothes, left them together with my tackle upon the rock, and by a strong effort stemmed the current and reached the shore. The boat was a hundred yards above, and when I arrived there my teeth were chattering with the cold, my feet were numb with bruises, and the black flies were making the blood stream down my back. We hastened back with the boat, and by wading out into the current again and holding it by a long rope, it was swung around with my companion on board, and was held in the eddy behind the rock. I clamber-

ed up, got my clothes on, and we were soon shooting down-stream toward the camp; but the winter of discontent that shrouded one-half of me made sad inroads upon the plain feelings of a day well spent that enveloped the other, all the way to camp.

These trout are not properly lake-trout, but the common brook trout (*S. fontinalis*). The largest ones are taken with live bait through the ice in winter. The Indians and the habitants bring them out of the wood from here and from Snow Lake on their tobogars, from two and a half to three feet long. They have kinks and ways of their own. About half a mile above camp we discovered a deep oval bay to one side the river—like an aneurism of an artery—that evidently abounded in big fish. Here they disported themselves. It was a favorite feeding-ground, and late every afternoon the fish rose all about it, making those big ripples the angler delights to see. A trout, when he comes to the surface, starts a ring about his own length in diameter; most of the rings in the pool, when the eye caught them, were like barrel hoops, but the haughty trout ignored all our best efforts; not one rise did we get. We were told of this pool on our return to Quebec, that other anglers had a similar experience there. But occasionally some old fisherman, like a great advocate who loves a difficult case, would set his wits to work and bring into camp an enormous trout taken here.

One afternoon, quite unexpectedly I struck my big fish in the head of the lake. I was first advised of his approach by two or three trout jumping clear from the water to get out of his lordship's way. The water was not deep just there, and he swam so near the surface that his enormous back cut

through. With a swirl he swept my fly under and turned. My hook was too near home, and my rod too near a perpendicular to strike well. More than that, my presence of mind came near being unhorsed by the sudden apparition of the fish. If I could have had a moment's notice, or if I had not seen the monster, I should have fared better and the fish worse. I struck, but not with enough decision, and before I could reel up, my empty hook came back. The trout had carried it in his jaws till the fraud was detected, and then spat it out. He came a second time and made a grand commotion in the water, but not in my nerves, for I was ready then, but failed to take the fly, and so to get his weight and beauty in these pages. As my luck failed me at the last I will place my loss to the full extent of the law, and claim that nothing less than a ten-pounder was spirited away from my hand that day. I might not have saved him, netless as I was upon my cumbrous raft, but at least I should have had the glory of the fight, and the consolation of the fairly vanquished.

THE fishermen at Red Bluff have lately been catching in their nets and returning to the water great numbers of shad fry. These are the fish of which 25,000 were placed in the river last year, and which have not yet started to the sea.

Of the 250,000 white fish eggs from Northville, Michigan, sent by the United States Fish Commissioner to our State Commission recently, only about 5,000 reached here in good condition. All the rest were spoiled by the zealous care of railroad officials, who to keep them from getting below zero parboiled them before the stove in the express

car. In the same manner the shipment of Japanese salmon eggs by the Japanese authorities was spoiled by the captain of the vessel in which they were brought over.

THE Governor of Tahiti came over here recently to obtain a supply of our best fishes with which to stock the waters of the island. He purchased 20,000 Eastern trout eggs, and made arrangements to have them transported first in a schooner, then in a man-of-war, to the island, but owing to lack of facilities for the shipment of the necessary quantities of ice the enterprise was abandoned, and the eggs, which are in the State hatching-house, have been sold to a man who proposes taking them to Guatemala to stock the mountain streams there.

THE culture of Coffee in Southern California is becoming profitable. The plant grows as vigorously as in the Coffee countries of South America, and yields a bean of a strong aromatic flavor: The central and southern portions of the State are the regions peculiarly favorable.

PINEAPPLE CULTURE. — Major MacDougall has met with thorough success in the cultivation of the Pineapple. He has growing in his garden, in the open air, partially protected by a glass screen, a small but very healthy Pineapple tree, from which depends a notably large Pineapple. The fruit is much larger than the ordinary article of commerce. It is now quite ripe. It thus appears that we can grow the Pineapple as well as the Banana in Los Angeles. We are certainly warranted in stretching our climatic pretensions beyond the borders of the semi-tropical zone.—*Los Angeles Herald*, Feb. 17.

Selected Articles.

TO THE SMALL CELANDINE, OR COMMON PILEWORT.

Pansies, lilies, kingcups, daisies,
Let them live upon their praises ;
Long as there's a sun that sets
Primroses will have their glory,
Long as there are violets,
They will have a place in story ;
There's a flower that shall be mine—
'Tis the little celandine.

Ere a leaf is on a bush,
In the time before the thrush
Has a thought about its nest,
Thou wilt come without a call,
Spreading out thy glossy breast,
Like a careless prodigal ;
Telling tales about the sun,
When we've little warmth, or none.

Comfort have thou of thy merit,
Kindly unassuming spirit !
Careless of thy neighborhood,
Thou dost show thy pleasant face
On the plain and in the wood,
In the trail—there's not a place,
Howsoever mean it be,
But 'tis good enough for thee.

Ill befall the yellow flowers,
Children of the fleeting hours !
Buttercups, that will be seen,
Whether we will look or no ;
Others, too, of lofty mien,
They have done as worldlings do,
Taken praise that should be thine,
Little, humble celandine !

Prophet of delight and mirth,
Scorned and slighted upon earth ;
Herald of a mighty band,
Of a joyous train ensuing,
Singing at my heart's command,
In the paths my thoughts pursuing,
I will sing, as doth behove,
Hymns in praise of what I love.
—Wordsworth.

ALMOND STOCKS.—J. H. Reed writes to the *Russian River Flag* as follows :
"With reference to budding Peaches or Plums on Almond trees, I have tried it repeatedly and successfully, such buds producing as fine fruit as the trees from which they were taken."

WINDOW PLANTS.

You can not give window plants too much light or sun during this month. Early in the morning they enjoy a sprinkling overhead so that they may dry before the sun gets hot, or they may be sprinkled about two or three in the afternoon, when the sun's heat is on the decline, and so that they may be dry before night. Don't sprinkle water on blossoms else they will spot, rot, and quickly vanish. Give lots of water to Carnations, growing Roses, Calla Lilies, Bouvardias, Smilax, and other fast-growing plants that are in bloom, and if the pots have become well filled with roots, and the soil appears exhausted, apply a mulching of thoroughly decayed manure. Weak manure water is an excellent stimulant, but must be applied cautiously, as too much or too strong is ruinous. Guano-water is first-class if judiciously applied, but I would advise amateurs not to trifle with artificial manures unless they know what they are doing. Calceolarias and Cinerarias require the coolest treatment, and are better kept in pits or frames that are well covered up at night than in the house, so long as frost does not reach them. They like good feeding, and daily syringing, and as they are liable to green fly, should be looked after in that direction. Cyclamens like warmish quarters and a place next to the glass. Crassulas are very pretty and effective window plants, and they last a long time in bloom, and submit with impunity to any amount of "kicking about." *C. lactea*, *quadrifida*, and *rosularis* are now at their best. *Nierembergias* are budding thickly. Artillery plants are multiplying their guns, and *Zonale Pelargoniums* are promising a famous display. Among other win-

dow plants now in full beauty are *Libonia floribunda*, Chinese Primroses, *Cotyledons* (*Echeverias*), Cape Heaths, *Epacris*, *Reinwardtia trygina*, *Mignonette*, *Peperomia*, Sweet *Daphne*, *Catalonian Jessamine*, *Fuchsia arborescens*, *Polygala grandiflora*, *Manettia micans*, *Rondeletia anomala*, etc. *India-rubber* plants and *Dracenas* look fresher and are healthier for having their leaves sponged over now and again.

Leave *Fuchsias* and Lemon-scented *Verbenas* undisturbed. Look over *Caladium* and *Dahlia* roots to cut out any decaying pieces, and rub over the wounds with powdered charcoal to stop further rotting. Keep *Century Plants*, *Opuntias*, and other *Cacti* in the driest and lightest part of the cellar; keep them cool and dry, but never admit frost. Immediately on appearance cut out decaying spots for they spread alarmingly. If you have *Crocuses*, *Squills*, *Hyacinths*, or other spring-blooming bulbs potted and bedded in earth, sawdust, sand, or ashes, take out a few of the more advanced and best rooted, and promote them to the window or greenhouse, gradually inuring them to the light, and in this way keep up a succession. *Rhododendrons*, *Euonymuses*, *Laurels*, *Camellias*, *Oleanders*, etc., leave undisturbed, beyond giving them all the light available. The earliest blooming *Azaleas* may be taken into the house if wanted to flower soon, and a few *Deutzias* or *Lilacs* if established in pots can be hastened into bloom if transposed to warmer quarters, and sprinkled overhead twice a day.

Frames should be uncovered every fine day, and in the event of snowy or rainy weather the sashes or shutters instead of being removed had better be tilted up. Over the almost hardy herbaceous plants we winter in frames, we

scatter thinly some rough salt, hay, or leaves, so that if the ground in the frames does get frozen, the plants will be protected from a hasty thaw. It is better to uncover early in the morning and shut up early in the afternoon, than let the sun shine on the shutters and set on the plants. Violent thaws and much wet are destructive to frame-plants.

Unless you have exceptional quarters for your plants, as a warm, close greenhouse, don't repot during January. If any accident like pot-breaking occurs, or the roots be washed bare of soil, or the soil in the pots has become so sodden and the drainage so clogged as to prevent the ready escape of water, then repotting may be advisable, and if it should, use the smallest possible pots—that is just no larger than can hold the roots—and poor rather than rich soil. In stoves and warm greenhouses gardeners can repot and grow on young and soft-wooded plants during winter as well as summer, but amateurs do these things with risk. — *Rural New Yorker*.

ORANGE CULTURE IN THE SACRAMENTO VALLEY.

The January issue of the *Southern California Horticulturist* contains an interesting discussion on semi-tropical fruits, in which a committee makes a report on an investigation to the questions of irrigation, fertilizers, budding, diseases, pruning, etc. The subject of tropical fruit growing is becoming more interesting each year, and there is scarcely a family which has not a few trees by way of ornament and use throughout our wide-spreading valleys, foot-hills, or mountain ranges. As to profit, few, if any, expect to compete with our southern counties, which is the home of semi-tropical fruit.

The irrigation question is becoming an interesting one, and its application to any one object is food for thought. In the committee's report, referring to the Orange and Lemon, some growers cover the entire ground with water, without regard to cultivation. Others irrigate less and cultivate more. The opinion of many is that an over-supply of water is a detriment to the roots of the trees, as it tends to decay. This same subject is often discussed among those who have propagated tropical fruits in the Sacramento Valley. Various plans have been taken up, difficult ideas promulgated, and each in his own practical way has worked out systems of treatment adapted to condition of soil and its depth and richness. The system which most have adopted is similar to that of Mr. N. W. Blanchard, of Santa Paula, Ventura County, who, as stated in the proceedings, has a large orchard in the Santa Clara Valley, but ours is more of an improved plan.

In the spring, make a deep basin around the tree, which remains throughout the year. Fill it with rotten compost, then fill it with water, but do not cover each time with dry earth. The compost acts as a mulch, but little evaporation occurs, and the surface is kept cool and moist. Thus the surface is retained twice the time it would have been had no mulch existed. It also has another beneficial effect: that is, it maintains a more uniform temperature. The roots remain strong and vigorous. The water does not scald the tree as by flooding. The young feeders extend in every direction, seeking food and nourishment for the plant. The tree perfects its fruit more gradually, and is not liable to disease.

I have, perhaps, the oldest Orange trees on the plains—nineteen years.

They are healthy, strong, and vigorous. The greatest drawback is coming in contact with our north winds. Then they require plenty of water; each year I work in the compost left during the past year as a fertilizer. Make a new basin and refill it with new compost.

The classification of soil in various localities as to the amount of water which is required, in order to provide sufficient for absorption and evaporation and thus keep up a uniform state, was noted by Judge Eaton, of Pasadena. His idea on the question agrees with mine.

My Oranges are standards from the old stock brought from Los Angeles. The Lemons are grown from branches turned down to root from a Lemon stock imported from France. The first crop last year was small, as the trees were five years old. This year the trees have made a tremendous growth, and produced the largest Lemons I have ever seen. This I attribute to water, good mulching, and having good drainage. The situation is on a knoll. Both the Orange and Lemon skin are thick at first, but after remaining on the tree till April or May, they are juicy and not so sour.

Some have budded trees; they come in earlier, but, as far as I can judge, standards are the best for length of life. My neighbor, Mr. Lowell, has a fine Orange tree, thornless, blossoms early, fruit large and sweet. Mr. Lee has some from the Sandwich Islands, and a larger variety than any one else on the plains. His hardpan is thin, lying on a marly soil beneath. He digs through and does not water. The roots find sufficient moisture, and he has fine fruit.

In the city Oranges and Lemons are seen in many gardens. The soil is deep, black loam, with alkali mixed.

The roots penetrate to a great depth. As far as I know, they are healthy, bear heavy fruit, and are of good size. On the American River the soil is sandy loam. What few trees are out are doing well. On the plains, where the most are raised, the soil is red, light depth, resting on hardpan.

When young, the trees require the best of care and protection from the wind and frost. After a few years they take care of themselves. During the late heavy frost I do not see that the old trees have suffered. Sometimes, when late waterings in the fall are given, the ends of the tender branches that have grown out are cut off some few inches.

Throughout the city, the young trees are encased, with a cloth placed around them, on high stakes, as the frost is heavier there than out on the open plains. In regard to adobe soil, some are doing well, making good growth, strong and healthy. As the soil is of a strong nature, I do not see but by prudent care and cultivation such soil can be made suitable for their growth.—*Pac. Rural Press.*

PLANTS AND FERTILIZATION.

Sir John Lubbock lately delivered an interesting lecture in London on the relation between plants and insects, which was reported in the *Mark Lane Express*. That portion which relates to plants and their fertilization will be of general interest. It is as follows:

The speaker began by remarking on the many differences existing in plants, not only differences of form, size, and color, but also in other respects, some being hairy, some glutinous, some sticky, etc. These may be accounted for in a great measure by the relations borne by plants to insects, the visits of

which are generally necessary to ensure the fertilization of one flower by pollen from another. In some cases, however, such as that of *Drosera*, the object of the flower is to attract insects for the purpose of devouring them, and therefore the leaves are covered with sticky hair, which bend gradually forward when an insect alights on the leaf, and squeeze it slowly to death, its juice going to the nourishment of its alluring and deceitful foe. It is easy to see the advantage which flowers gain from secreting honey, inasmuch as they are dependent for fertilization on the visits of bees and other insects, which, while feeding, necessarily dust themselves with pollen, and thus convey it from flower to flower.

But it is less easy to understand why honey should be secreted on those parts of flowers where no pollen exists—at the base of the leaf stalks for instance. For the explanation of this we are indebted to Mr. Belt and M. Del-pino, who observed that in some cases, upon the stems, and living on this honey, exist colonies of small ants, constituting a most efficient body-guard against the attacks of leaf-cutting ants, who would otherwise strip off every bit of foliage. They also protect plants from the attacks of many other insects, and are in their turn made use of by various small species of aphides, who, by secreting a sweet fluid, of which they allow the ants to avail themselves, convert them from enemies into friends and thereby secure a cordial instead of an angry reception. Harmless, however, and even useful, as are ants, when confining themselves only to the stalks of flowering plants, they would generally be positively injurious to the flowerers, as they would merely rob those of their honey, without repaying the debt by carrying the pollen to others.

Flowers, therefore, have been driven to protect themselves by various devices, such as slippery surface, sticky glands, or hedges of hairs, which entirely prevents the ants from obtaining access to the nectary. For the visits of ants to flowers would not only deprive these of a great portion of their honey, but would almost entirely prevent those visits of insects which are so necessary to secure cross-fertilization. Any ant occupying for the moment the nectary of a flower, and finding the proboscis of a bee intruding therein, would very naturally seize it between her powerful jaws, and thus, by frightening other winged insects away, would materially interfere with the future prospects of the flower. Various instances of the modes by which ants are excluded from flowers were then given. Take that of the common Fox-glove, for example. It is a closed box, within which are the anthers, the pistil, and the honey. It has the specialties of a flower which is adapted for cross-fertilization by insect agency—color, honey, and the arrangement of stamens and pistil, but it is closed. At first sight this may appear to be an anomaly and a disadvantage, but the contrary is the case. The flower is adapted for fertilization by humble bees, and they alone can force open the door. To other insects the box is closed, and thus the flower is protected from robbery.

Another interesting case is that of the common *Polygonum Amphibium*, the beautiful rosy flowers of which are richer in nectar, quite unprotected from the visits of creeping insects, as long as the plant is grown in water. The arrangement of the stamens and pistils is such that the visit of any flying insect can not fail to insure cross-fertilization. When, however, this plant is grown on

land, and consequently liable to the visits of creeping things, certain hairs, terminating in sticky glands, are put out, effectively barring the entrance of these unwelcome and more than useless guests. The so-called "sleep" of flowers is also another means of self-defense, adopted by those flowers whose fertilization is dependent upon the visits of day insects; while on the other hand there are other species of flowers adapted for moths and other nocturnal insects, which expand toward night, and scent the evening air with delicious perfume. The curious life-history of *Silene Nutans*, the "Nottingham catch fly," was then referred to. The advantages of early rising were illustrated by the case of the flower commonly called "John Gotobed at noon." This flower opens very early, to be ready for the visits of bees, and closes in time to prevent intrusion from ants, which, although not lazy animals, are at any rate occupied at home in their domestic affairs until later in the day, and do not emerge till the dew is off the grass.

CURIOUS DISCRIMINATION OF BEES AND BUTTERFLIES.

The remarks of Sir John Lubbock in a late lecture on the relation of insects and flowers leads to the inference that in his opinion the brilliancy of color rather than the odor is the attraction. My observations lead me to suppose that it is not the color, but the particular odor of each variety or species of flowers which induces the visit. With great interest, not unmixed with curiosity, I have observed (my attention was at first casually excited), that bees particularly, and also butterflies, visit a distinct variety, and for the time confine their attention to it, settling on and sucking the honey of that variety only; that is, a bee settling on a scar-

let *Geranium* will not go from it to another species or variety, but gives its attention to the particular variety only irrespective of color, whether scarlet, pink, or white, never going from a scarlet *Geranium* to another scarlet flower, even if in contact. Whatever the species of flower it is the same—*Pelargoniums*, *Petunias*, *Heliotropes*, *Lilies*, etc. The visit is from *Pelargonium* to *Pelargonium*, not from *Pelargonium* to *Geranium* (both crane's bills), and from *Lily* to *Lily*, irrespective of color. I never remarked a bee go from a *Lily* to an *Amaryllis*, or the reverse. The object of this distinctive selection appears to be fertilization. The indiscriminate admixture of the pollens of distinct varieties would probably frustrate the ends of nature, and lead to monstrosities of barrenness. What would be the effect of the admixture on its own stores is a distinct question. So far as the insect is concerned, doubtless the fact has relation to its own economy. Whatever be the reason, there appears to be the harmonious adjustment of two facts under the relations of one law. If the color, and not the odor, was the attraction, the visits would be indiscriminately made to all flowers of a brilliant hue. The observation of the lecturer as to flies being attracted by stinking plants or carrion seems to prove the fact suggested. Flies settle indiscriminately on all putrefactions, and will go immediately from a flower to offal, or from offal to a flower. With bees and butterflies there is certainly a discriminative selection guided by odor; I have also remarked that some flowers are rarely, if ever, visited by bees.

I have never in the books I have read met with this observation, and when so acute and distinguished an observer as Sir John Lubbock passes over the circumstance, I presume either the fact

has not been observed, or, if observed, has been considered inconsequential. The observation may be worth nothing, but in these days of minute science, when every infinitesimal variation is noticed and invested with importance, there may be a significance in the fact which escapes me, but which with others may have its value. So far as I know, the occurrence is invariable; being so, the inference is that odor, and not color, is the attraction. I have called the attention of others to the occurrence, who have, watching the results, always come to the same conclusion as myself.—*Correspondence of Nature.*

GRASS FOR LAWNS.

The grass generally used in this State for lawns is the Kentucky lawn or blue grass. In our dry summer climate, however, this grass requires frequent irrigation, and will die without it, as the roots are not deep, but surface feeders. The top should also be kept cut close to keep it green and fresh.

Probably the next best grass for lawns is the Australian, or perennial rye grass. This is a more vigorous grower, has a broader leaf, and more luxuriant appearance. It does not, however, make so close or good a sod, and also requires frequent irrigation and trimming in the summer season. The Bermuda grass is also used for lawns, and makes the most compact sod of all the grasses, and will live better in a dry climate and on a dry soil without irrigation. The strongest objection to the Bermuda grass is that it spreads so rapidly by runners that it is almost impossible to confine it where desired. It also spreads rapidly from the seed, which will mature if kept close within two inches of the surface. In regard to the effect of grasses on

trees, this depends very much upon the variety of the trees. If the trees are surface feeders—sending their roots out horizontally near the surface, like the orange—the roots of the grass will injure them much more seriously than if they send their roots deep into the soil, like the walnut and most nut-bearing trees. Then again, young trees are more affected by grass growing near them than older ones, whose roots are stronger and more vigorous. If it be desired to grow trees in a lawn, it would be better to plant out the trees where desired, and cultivate all the soil a few years before sowing the grass. In this way they will have gained greater strength to resist the sapping influences of the grass roots. A good mulching about the tree with well-rotted manure, with a frequent irrigation, will also assist materially in counteracting the influence of the grass.—*Bulletin.*

THE London Garden publishes sketches to aid the collector in determining what to gather among edible fungi and what to avoid. What are the infallible rules for distinguishing the true Mushroom from all other fungi? The true Mushroom (*Agaricus campestris*) is invariably found among grass in rich, open pastures, and never on or about stumps or in woods. Another point is the peculiar, intense purple-brown color of the spores (analogous to seeds); the ripe and full matured Mushroom derives the intense purple-brown color (almost black) of its gills from the presence of these innumerable colored spores. It always grows in pastures; always has dark purple-brown spores; always has a perfect encircling clothly collar, and always gills which do not touch the stem, and a top with overlapping edge.

Editorial Portfolio.

OUR FRONTISPIECE.

BUERRE D'AREMBERG.

We present to our patrons this month a colored engraving of a winter Pear which has a good record among pomological works. It is the "Buerre d'Aremberg," but is known by several other names, viz.: "Duc d'Aremberg," "Colmar Deschamps," "L' Orphelines," "Deschamps," "D'Aremberg Parfait," "Buerre des Orphelines," "Orphelines d'Engheim," and one or two others, owing to the indefiniteness which pertains to fruit nomenclature. This Pear is often confounded with the "Glout Morceau," but there are several other points of difference as pointed out by Downing. The fruit of the Buerre d'Aremberg is above medium size, is of dull, pale green color, becoming, at maturity, light yellow, clouded with green, and with traces of light cinnamon russet. The flesh of the fruit is white, buttery, and melting, with an abundance of rich, delicious vinous juice. The tree is very hardy, and commences to bear early. It is a good healthy grower, with long-jointed wood of yellowish brown color, dotted with pale gray specks. It is reported to thrive best on warm, rich, loose soils, rather than on heavy clays. It is a good bearer, and the fruit may be packed like Apples and brought into a warm room to ripen as desired. The Pear is of Belgian origin.

What trees have the power of precipitating most general moisture from the atmosphere and the greatest rainfall from the clouds? The French Commission reports decidedly in favor of Firs and Pines, with their pinnacle tops and electric condition.

A VALUABLE COLLECTION OF INSECTS.

We understand that a rare and extensive cabinet comprising as many as 250,000 specimens in entomology collected by Mr. Henry Edwards, the most eminent scientist in this department of Natural History, on this coast, can be purchased at a reasonable price for either private or public beneficial purposes, by any person or persons appreciating its value. It has been fully classified by Mr. Edwards. How important it is that such a choice and precious collection should remain in our State, and we most earnestly hope that some one or more of our wealthy and public spirited citizens will not lose this opportunity of securing it by purchase, and present it to our University, and appoint Mr. Edwards Professor at the institution of this most useful and interesting branch of science. We are informed that Professor Agassiz pronounced this collection worth \$50,000, and we believe that it can now be purchased for about \$12,000.

PUBLICATIONS RECEIVED.

"Vick's Illustrated Monthly Magazine," for February, 1878. Rochester, N. Y. This anxiously looked-for, instructive, and beautiful publication, splendidly embellished with two most handsomely colored plates of a group of Dahlias and Carnations and Picotees, besides a large variety of neat and finely executed engravings on wood for improving home grounds, of plants, flowers, and flower-beds, with lovely vignettes of landscapes and rural scenery of different kinds, is upon our table, and elicits our warmest commendation. The reading contents are highly interesting and useful for all florists, embracing the cultivation of the Dahlia

and Carnation, Flower Chats, Heat and Flowers, Flowers in Texas, Native Fernery Plants, A Cheap Plant Support, My First Experience, by an old gardener; The Tomato in England, American Flowers in Germany, Japan Plants at Paris, The Government Seed Shop, Cherry Culture, Celery Culture, Gardening in Wisconsin, The Snow Plant, Amateur Gardeners, and a host of other beneficial points of knowledge and information relating to horticulture.

"Wyman's Catalogue of Flower and Vegetable Seeds and Summer Flowering Bulbs," for 1878; Rockford, Ill. A neat and useful guide on these subjects.

"Storrs, Harrison & Co.'s Catalogue for 1878, No. 2;" "Spring Catalogue of New and Rare Plants," including greenhouse and bedding plants, Painesville, Ohio. Prettily illustrated with engravings of various favorite and some new and rare plants.

"Rose Grower's Companion and Floral Guide for 1878," A. K. Williams, Cascade Rose Nursery and Greenhouses, Richmond, Indiana, with good plates of Roses and other prized flowers, with cultural directions for the Rose.

"Bloomington Nursery Plant Catalogue," including Plant Novelties, Greenhouses and Bedding Plants, Roses and Bulbs, etc., Bloomington, McLean Co., Ill.

"Descriptive Catalogue of Fruit and Ornamental Trees and Plants," cultivated and for sale at the Great Northern and Southern Garden and Nursery, Wilmington, Delaware, Spring of 1878, Randolph Peters, Proprietor; an unembellished but full and well printed list of trees, plants, flowers, etc.

"Seed Catalogue, 1878." A Retail List of Select Flower, Vegetable, and

Agricultural Seeds, offered by William Bull, New Plant Merchant, King's Road, Chelsea, London, S. W., having for sale seeds of the New Liberian Coffee (*Coffea Liberica*), and seed from prize strains *Primula sinensis*, and Novelties and Specialties in Flower Seeds, etc.

"Department of Agriculture—Special Report, No. 1." Statement showing the condition and prospects of the Cane Sugar Industry in the United States; Washington, 1878.

"Centennial Prize Medal and Diploma for best Wilson Early Blackberry, and best Brandywine Raspberry.

"Wholesale Price List of Small Fruit Plants, etc., for Fall, 1877, and Spring, 1878," grown and for sale at John S. Collins' Pleasant Valley Small Fruit Nursery, Moorestown, New Jersey. Established 1855.

"Wholesale Price List of the Bloomington Nursery," McLean County, Ill., for the spring of 1878. W. F. Baird, Trustee for I. S. Tuttle and A. Follett, Proprietors.

"L. B. Case's Botanical Index to the New, Rare, and Beautiful Plants," grown and for sale at his Commercial Greenhouses, Richmond, Indiana, containing a good paper on Window Gardening, and articles on the *Amaryllis*, *Crinum Pratense Canaliculatum*, *Pancratium rotatum*, *Stapella serpentina* and *S. asterias*, *Dracaena goldieana*, Nanz & Neuner's New, Double, White Perpetual Blooming Carnation, "Peter Henderson," New Abutilons, etc.

"Seed Annual, 1878," D. M. Ferry & Co., Detroit, Michigan. An extensive and beautiful catalogue, finely illustrated with colored and plain engravings—one of the colored plates being the Dwarf Crested Japanese Cockcomb (*Celosia Japonica Christatanana*).

WOODWARD'S GARDENS.

During our late visit to these famous and most popular attractions of so many objects comprised in comparatively so small an area of ground, we noted that the enterprising and enthusiastic proprietor is still making improvements and adding feature to feature in the various departments which are so well calculated to gratify and improve the æsthetic tastes of our people. That portion of the gardens which was once appropriated as a lot for deer and some other grazing animals, is now being converted into an Italian garden and scenery. A broad and handsome terraced stairway has been lately erected leading up the slope, the pillars of which are to be ornamented with elegantly shaped vases, to be, of course, filled with beautiful flowering plants. Other large vases will be placed at suitable intervals on the sodded terraces, and walks, of handsome designs and forms, to be used as receptacles for imposing and graceful semi-tropical and tropical plants. Probably some other strictly characteristic scenic and formal features will be added from time to time to this specimen of Roman or Italian style of gardening.

The building which was formerly a photographic gallery, with a case of natural history specimens in the centre, is being altered to contain cases on both sides for similar displays, with an upper walk and convenient stairs leading to it. These cases will hold a large amount of objects connected with ichthyology, crustaceans, mollusks, insects, ornithology, quadrupeds, etc.

At the farther end, opposite the entrance, there has been erected an apparatus termed a Coographeicum which turns on an axle moved by a small steam engine; this machine has eight

triangular compartments, in which will be exhibited animals and animal life characteristic of all parts of the world from the polar, arctic, sub-arctic, colder temperate, warmer temperate, sub-tropical, tropical, and equatorial zones, with painted scenes on the back and sides illustrating the vegetation and botany of these several zones. The whole of these plans and the above ingenious contrivance are due to the skill and knowledge of Mr. Gruber, the superintendent of Natural History at this most attractive and varied place of public amusement.

Where was lately one of the waters for the sea-lions, there is to be made a large and deep pond for fish and fish breeding, and over or by the side of which there will be erected a raised walk or promenade, similar to that lately built in front of the cages of monkeys and other animals in the more distant yard appropriated for the larger wild beasts.

Where the old gymnasium formerly stood, back of the buildings of the natural history museum and cabinets, picture gallery, and greenhouses in front of the entrance gate, there will be erected a large and splendid conservatory for ferns, the present fernery being much too small for these lovely, interesting, and extensive species of the vegetable kingdom: and we may here add that, taking the Gardens as a whole, there are none in the world which can present such a great variety of trees, plants, and flowers, from sections so widely remote, and which can present contrasts of so vivid a nature, as have been effected here in these grounds, containing little more than about six acres.

In ministering pleasure to the tastes of visitors, Mr. Woodward has, perhaps, unconsciously presented a lesson

of great importance. He has pointed out the absolute possibility of the introduction of trees from foreign countries, and demonstrated their completely successful culture.

Ornamental gardening on this coast has received an impetus from the influence of these facts. Witness our many streets and public and private grounds adorned with choice shade or ornamental trees from Australia, the islands of the Pacific Ocean, and elsewhere. In the words of a late visitor here :

"Was ever a country so gifted as California, where in one garden can be grown trees from the snowy summits of the Sierra Nevada by the side of the tropical palm, coffee, and orange; where, too, the apple and pear from our Atlantic States thrive; where the cacti bloom with the geranium; where Australian, Chinese, and Japanese trees twine, and droop, and mingle their branches together; and still the bear and panther rove over the country, or even tumbling over the lawn, or the beaver works his silent way among the waters of the meandering streams, or the fountain bubbles out its silver-toned music at the same time with the richest melodies of the mocking-bird?"

Mr. Woodward must have laid out from first to last, exclusive of land, at least \$150,000, and still he is adding every available curiosity from all parts of the globe, and suitable to California.

All visitors will find the collection of plants and trees, and all the specimens of natural history, deserving of an extended and minute study. We had nearly forgotten to append to this imperfect notice of a delightful public establishment, that the skillful, able, and indefatigably industrious Mr. Shumann has the entire superintendence of the horticultural and ichthyological departments of these grounds.

FRUIT CULTIVATION AND REPORT OF FRUIT AND VEGETABLE MARKET.

As is well known the Cherry is one of the first fruits of the season, and highly esteemed. In California it is very seldom grown in any other way than as a standard tree. It is a fruit that on our coast flourishes well in rich and friable soils, and pretty well in even moderately fertile land. Its prolificness, sweetness, flavor, and size here, is as good as in any other part of the world, and it has decidedly the great advantage over most parts of the East in being free from puncture by any species of the curculio insect, as well as from rotting on the tree, on account of its maturing in our dry late spring and early summer seasons. The blossoms are hardly ever injured by our light frosts. It is best to grow Cherries in as strong and loose a soil as possible, and deeply cultivated, on account of their roots requiring plenty of room to descend thoroughly. The pruning of standards must be confined to the removal of dead and superfluous branches, which should be taken away while they are small, as the trees will not bear severe amputation without incurring great danger from gumming. The leaders or terminal growths should never be pruned unless it is desired to increase their number, which is seldom the case except with young trees. It is advisable to perform all the necessary work on this family late in the summer or in the fall, as they begin to move at a very early part of the spring, and will not then bear cutting. A dry soil for the Cherry is the universal maxim, and though it is so hardy a tree that it will thrive in a great variety of soils, yet a good, sandy, or even a gravelly loam is its favorite place.

The term bigarreau, to which class

the Bigarreau of Mezel belongs, and which was illustrated in our February number, came originally from the French *bigarree*—speckled or variegated skin—but it is now in general use by all pomologists, to signify hard or firm fleshed, sweet Cherries—those which are firm and crackling, as compared with the melting, tender flesh of the Heart Cherries.

Our illustration this month of the Buerre d'Arenberg Pear leads us to say a few words here about this valuable fruit. Pear trees delight in a moderately rich, well drained, friable loam, and when grown as standards particularly, should be placed in some spot sheltered from our strong westerly winds prevailing so much in our summer months, or both the trees and fruit will be liable to much damage. Standard trees do not require much pruning, beyond the necessary thinning of superfluous branches; and therefore the training is merely to afford the tree the best opportunity of forming its head in a natural manner, observing only to have the branches so arranged that everyone may receive its proper share of light and air. Pear trees produce their fruit on spurs, and these are usually the result of blossom buds, which occur near the end of each season's wood; these spurs remain fruitful several years, and therefore the principal aim in pruning should be to furnish and preserve to the tree an abundant supply of them. It is evident to do this we must preserve the old wood, because there will be the greater number of spurs. Pruning forms a very important part of the management of these trees, and without proper attention in this respect those which are trained in any manner soon become a mass of immature, unfruitful shoots. It must be regarded as a rule in pruning Pear trees to

avoid cutting back any branches except where an additional number of shoots are required, for, unlike most other trees, an exuberance in these can not be corrected by pruning the strongest, as it rather induces an increase of vigor in the parts so treated, so that whenever it is necessary to remove any part of the head, it should be cut completely out; with good management, however, it can not be requisite to remove large branches from a healthy specimen, because the timely pruning of the smaller shoots should obviate such an objectionable occurrence.

Old or cankered trees may often be renovated by cutting them back to within a couple of feet of the springing of the branches, and will come full of vigorous shoots, that by judicious thinning will form a complete new head in two or three years in our climate, but their ultimate success must depend upon the condition of the roots; if these are placed in bad wet soil, it will be merely waste of time to allow an unhealthy tree to remain, and far preferable to provide a successor in a better situation.

There is but little to record here at this time of year concerning our fruit and vegetable market. The fruits about the middle of last month (February), were but little altered from our last report. The market was better supplied with Asparagus and other kinds of green vegetables.

Potatoes of all descriptions were higher at the beginning of this month (March), and nearly all varieties of green vegetables showed an advance; Asparagus, being an exception, was more plentiful and cheaper. Rhubarb was added to the list, and retailed at 20c. Los Angeles Oranges superseded foreign varieties in our market, and were somewhat scarce during the week

preceding the above date. The Orizaba brought a large quantity, which was the first upward bound vessel since the break in the Southern Pacific Railway between Caliente and Pampa. According to the always correct report of the *Commercial Herald*, the steamer City of Chester brought 2,493 boxes of Oregon Apples—those at auction ranged from \$1.10 to \$1.85—the bulk were Wine-saps, and averaged \$1.50. The stock of California Apples was very light, owing to bad roads. Messina Lemons were in good supply.

The steamship City of New York from Honolulu brought 751 bunches of Bananas. We are indebted to Howe & Hall, Commission Merchants, for the following price list: Apples—Choice, \$1.75 to \$3 per box; common, \$1 to \$1.50 per box. Pears, \$1 to \$3 per box. Oranges—Cal., \$12.50 to \$35 per M. Lemons—Sicily, \$8.50 to \$10 per box; Los Angeles, \$1.50 to \$2 per 100. Limes—Mexican, \$17.50 to \$20 per M.; Los Angeles, \$4 to \$6 per M. Bananas, \$2.50 to \$5 per bunch. Pine Apples, \$8 to \$10 per dozen. Cocoanuts, \$8 to \$10 per 100. Dried Fruit—Apples, 4c. to 6c. per lb.; Peaches, 8c. to 9c. per lb.; Pears, 5c. to 8c. per lb.; Plums, 3c. to 4c. per lb.; pitted, 14c. to 16c. per lb.; Prunes, 12½c. to 15c. per lb.; Figs, White, 6c. to 8c. per lb.; Black, 4c. to 7c. per lb.; California Raisins, \$1 to \$2 per box; \$1.25 to \$2.25 per hf. box; \$1.50 to \$2.50 per quarter box; Blowers, \$1.75 per box. Vegetables—Cabbages, \$1.25 to \$1.50 per ctl.; Asparagus, new, 20c. per lb.; Marrowfat Squash, \$20 to \$25 per ton; Green Peas, new crop, 12½c. to 15c. per lb.; Chile Peppers, 7c. to 9c. per lb.; Garlic, ½c. to 1c. per lb.; Cauliflower, 40c. to 75c. per doz.

There is a large stock of fruits, sauces, etc. Imports from Jan. 1st. to

Feb. 1st.: Apples, dried, pkgs., 39; Nuts, sks. 20; other kinds, cks. and bbls. 220, cs. 5,704; bxs. 16,958; Oregon Canned Goods, cs. 190. Overland: Raisins, bxs. 832; hf. bxs. 70; qr. bxs. 50; canned, cs. 7,170.

We have a large stock of California Peanuts, and they can be bought as low as 3½c. to 5c., according to quality. Common Dried Apples are also plentiful, and they too can be bought in sacks as low as 3½c.; and so also of several other articles in the line of which we have a surplus. California Raisins are also in excessive stock, and many lots that are not strictly choice in quality will have to be sold for a song before the summer is past. At this date we have nothing cheering to remark respecting spot markets for any description of goods usually treated of under this head. There is quite a business stagnation all over the State. Early in the winter this was attributed to the fear of a dry season, entailing short crops, etc.; but now we have too much wet, heavy rains and floods, with every indication of large crop yields, yet trade languishes. We are, however, hopeful and very sanguine that we are to enjoy a year of great prosperity and considerable business activity in 1878.

THE PLUM.

The cultivation of the Plum and its near kin, the Prune, is destined to occupy a prominent place in our horticulture, and the following remarks in reference to it, published by A. B. Roberts, of Boise City, in the *Pacific Rural Press*, deserve attention:

While engaged in the nursery business for about twenty years, I observed some points that suggest to me the propriety and advantage of grafting

Plum on peach stock. First, the peach root is a vigorous, healthy root and gross feeder, and was always found to be of a healthy look, no matter at what age, or on what kind of soil; that the top, or wood above ground, was always found to be in a decaying condition from the time it was three years old. This observation resulted in the practice adopted by my parents, over forty years ago, of cutting back and renewing, the same as we renew Grape vines. Remembering that our old Peach orchards had been renewed time and again by cutting back the tops while the roots remained healthy, I was led to the thought that a Plum would succeed on such root.

Now, on the other hand, I always found the Plum root diseased, seldom digging a tree five or six years old but what I found the root knotty, with rotten spots and wood-borers in them. At the same time the wood of a Plum tree is a sound, hard, fine wood, seldom brown and decaying inside like the Peach. Knowing that they assimilated on the same stock, I commenced grafting Plum on Peach, and I have had them growing side by side, and from those first bearing up to those fifteen years old, I have always found the fruit superior in size, and the tree much larger and of more robust and vigorous appearance.

I have had experience with them on various soils, and am well satisfied that if I were planting upon a damp, heavy soil, where a Peach tree would be worthless, I would use Plum or nothing but Peach root.

As to suckering, the nuisance is beyond human patience to bear. I at one time had some Plums on Plum stock, and they were so much trouble that I dug them up and worked the ground for two years to get rid of the suckers.

Now I will tell your readers how to get a Plum orchard that will produce the finest of fruit, and succeed on a greater variety of soils than any other. Lay off the ground as you want the trees to stand in the orchard. Plant a few Peach pits at each point. Bud them in the September following with Plum, and the following spring remove all but one tree from each point. In this way you have a tree without the mutilating process of transplanting, and you will find that you can raise Plums from the tule lands of the Sacramento to the frost line of the Sierras.

I have seen Plums on Peach stock of the finest and most vigorous growth produce the most excellent fruit on wet, springy land, on dry gravel land with a well-drained subsoil, on alkali land with a hard-pan, subsoil, upon the foothill lands in Walla Walla, on the sand ridge lands, and upon cold meadow lands in Grande Ronde Valley, where, in the month of August, the Potato and Squash vines were killed with frost; and here in Boise Valley, upon the warm, sandy plains, in the cosy little foothill valleys, and upon the low bottoms of the river, where their feet stand constantly in water, the Plum seems at home.

PRUNING THE PEACH.—The Peach is remarkable for the free growth of its new shoots after severe pruning, and is less injured by pruning when in leaf than any other of our common fruits. We have practiced cutting back the present season's shoots late in the season with good effect. It should be done so late that no new sprouts would spring up from the buds below the cut, as these sprouts would not be likely to ripen their wood, and might be winter killed. Neither would we advise putting off large limbs at this time of year.

In all such cases it should be remembered that cutting away or stripping off leaves before growth has ceased, or nearly so, has a tendency to check it, more or less, according to the amount of foliage removed, and the vigorous or feeble condition of the tree. Young and rapid growers, on rich and well cultivated soil, will better bear pruning at this time than old and feeble growers. If much pruning is to be done, or the trees are moderate in vigor, wait till early next spring.—*Country Gent'n.*

FERTILITY OF RAIN WATER.—Liebig makes the statement that rain water filtered through field or garden soil does not dissolve out a trace of potash, silicic acid, ammonia, or phosphoric acid. The soil does not give up to the water one particle of the food of plants which it contains. The most continuous rain can not remove from the field, except mechanically, any of the essential constituents of its fertility. The soil not only retains firmly all the food of plants which is actually in it, but its power to preserve all that may be useful to them also extends to withdrawing from rain or other water all the ammonia, potash, phosphoric, and silicic acids held in solution. Rain water brings down yearly about twelve pounds of ammonia to the acre of ground, which forms a most valuable and effective principle as a fertilizer.

TRICYRTIS GRANDIFLORA.—This is indeed a superb plant. Flowers white, variegated with purple spots. Does best in pots or boxes of rich loam. In the spring and summer water freely. In October and November it will bloom, after which the stems will decay, and should be removed. Give little or no water from December to April, when it will again start into growth from the root.

TREATMENT OF BULBS.—Bulbs that have been forced are hardly worth saving for replanting, but can be made to bear an inferior crop of flowers by allowing them to remain in the pots till after the leaves drop, and then taking them out and keeping them dry till the next fall. The Cyclamen needs a little different treatment. The pots should be plunged out of doors in May, and the bulbs repotted in fresh earth in the fall; or the bulbs can be taken out of the pot and planted in the garden, and repotted in fall. This is one of the most beautiful and lovely of all the winter flowers that can be raised in the house.

METEOROLOGICAL RECORD.

FOR THE MONTH ENDING FEBRUARY 28th, 1878.

(Prepared for THE HORTICULTURIST by THOS. TENNENT, Mathematical Instrument and Chronometer-maker, No. 18 Market Street.)

BAROMETER.

Mean height at 9 A. M.	30.02 in.
do 12 M.	30.02
do 3 P. M.	30.01
do 6 P. M.	30.01
Highest point on the 2d at 9 A. M.	30.30
Lowest point on the 26th at 9 A. M.	29.60

THERMOMETER.

(With north exposure and free from reflected heat.)

Mean height at 9 A. M.	52°
do 12 M.	57°
do 3 P. M.	57°
do 6 P. M.	53°
Highest point on the 16th at 3 P. M.	62°
Lowest point on the 15th at 9 A. M.	47°

SELF-REGISTERING THERMOMETER.

Mean height during the night	43°
Highest point at sunrise on the 24th	48°
Lowest point at sunrise on the 14th	40°

WINDS.

South-east and south-west on 20 days; north-east and north-west on 4 days; west on 4 days.

WEATHER.

Clear on 3 days; cloudy on 20 days; variable on 5 days.

RAIN GAUGE.

	Inches.
4th	0.84
6th	0.49
7th	0.51
11th	1.51
12th	0.53
14th	1.62
16th	0.41
17th	0.86
18th	1.45
20th	0.11
23d	1.01
26th	0.82
27th	0.59

Total	10.75
Previously reported	15.02

Total for the season.....25.77



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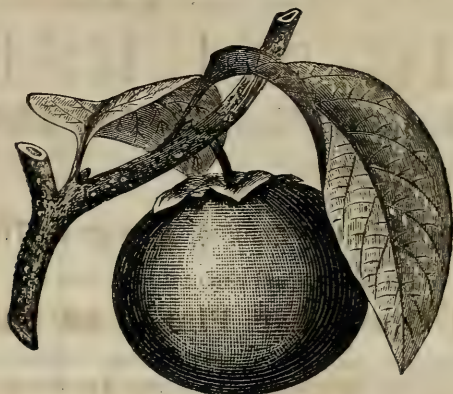
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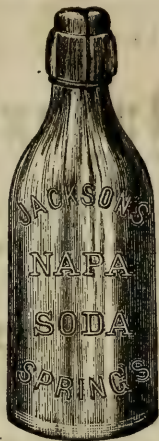
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DOYLE, LUKE, southeast corner Pine Street and Central Avenue.

GAUBERT, JOSEPH (South San Francisco Nursery), 619 Sacramento Street.

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IOCHNER, MAX, northeast corner Turk Street and Van Ness Avenue.

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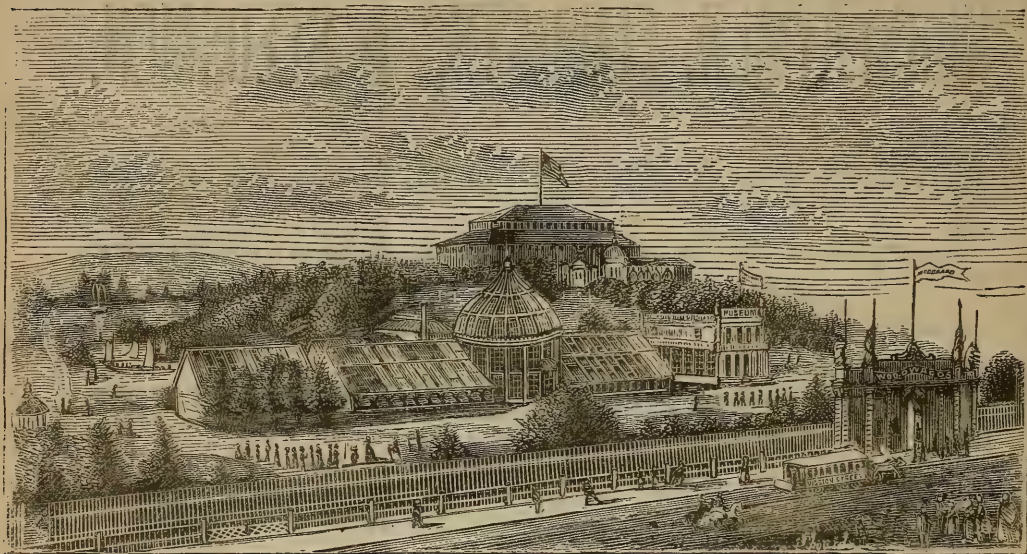
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THE
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VOL. VIII.

SAN FRANCISCO, APRIL, 1878.

No. 4.

STOCKS AS POT PLANTS.

BY W. C. L. DREW.

It would be no exaggeration to state that there are more Stocks grown in pots than the combined numbers of any three other plants. It almost defies calculation the immense quantity of these plants that are annually used for the decoration of windows, greenhouses, and conservatories.

The Stocks are home flowers for all, in country or city. Few windows there are which are not brightened and made cheerful by a Stock of some variety or size; they are, in fact, in all the larger towns cosmopolitan, there being few streets, lanes, or alleys, in which these beautiful plants are not to be found. With few exceptions, they find a spot in every home, whether they climb the broad marble stairs of the mansion, or the rickety stairs of the tenement garret.

The Stock is one of the easiest of plants to grow in a pot, but while we advocate them for pot culture we would not have their place in the flower border occupied by any less worthy plant; on the contrary, we would recommend more for the garden, the more that are

grown in the pot for the house or conservatory, or vase for the entrance hall.

The Ten-weeks-Stock is the most valuable, not only for the garden, but for pot culture. With all pot plants it is desirable to have a succession throughout the year. To do this with the Ten-weeks-Stock, commence by sowing about the middle of September, or not later than the first of October. Sow the seed in an open seed bed, of very rich light soil; do not let them become crowded; when of sufficient size to handle, select those of bushy habit and medium size in preference to tall, straggly specimens; these on examination should have little or no tap root, but an abundance of small fibrous roots, as such will not only produce more double blooms but also will flower earlier in spring and more abundantly.

Having selected your plants pot them in three-inch pots filled with equal portions of light loam, thoroughly decayed manure, and leaf mold; when potted water well and place in a cold frame or cool, shady place for several days, to recover the exhaustion consequent on transplanting. When they have become at home in their new situation place them in a sheltered sunny place

in the open air. When the pot is filled with roots, remove the plants into a four-inch pot, having only one plant in each pot; this will be its last removal, as a four-inch pot is large enough for one plant to come to its highest perfection. These should be protected from cold winds and frosts, in winter a temperature of 44 to 48 degrees, keeping as near the glass as possible to prevent their becoming drawn or weak. In California they may be safely wintered in many localities in the open air. These plants will furnish flowers in profusion from February to the last of May. To continue the succession sow again during March, and again in May, and for December flowers sow the last of June, treating them all in exactly the same way as the first sowing. It may be necessary to use a cold frame for the March sowing. Two things are to be remembered—the stronger growing plants will usually produce single flowers, and that the seed of choice double sorts is never cheap.

The second Stock worthy of pot culture is the Intermediate. These should be started in July to get stocky plants for the following spring; treat them in all respects as directed for the Ten-weeks-Stock, except in the final transplanting use a six-inch pot instead of a four. July sown seed will flower the following March; plants from seed sown in March will bloom in the following autumn.

The Brompton Stock sow in June for April flowering, in August for June to July flowering, and in March for plants to bloom from October to March. The Intermediate Stock is of a higher growth than the other strains—the flowers are very brilliant. The Brompton Stock, while not producing such an array of colors, is equal to any in fragrance and doubleness. For remarks

in regard to seed, cuttings, and descriptions of strains we beg to refer to February number.

MANAGEMENT OF CUTTINGS.

—
BY FLORIST.
—

In preparing cuttings it should be borne in mind that the power of producing roots rests almost entirely in those parts of the branch or stem called joints, or where the leaves and buds are already formed. Cuttings, therefore, ought in all cases, excepting in such as the Willow, or some other free-growing shrubs, to be cut transversely across, close under a joint or eye; and this must be done in a careful manner, for every cut produces a fractured or bruised section, so that in separating the cutting from the parent the former ought, of the two, to be the fractured part, and it is to rectify this fracture that we recommend the careful cutting transversely across of that part intended to become the new plant, which, if unattended to would rather be disposed to rot and decay than to throw out roots, or form those granular callosities which in many plants form first, and from which roots are certain to issue.

The proper time for taking off cuttings of evergreen plants—and most tropical plants may be so considered—is when the sap is in motion, in order that by its returning by the bark, it may form a ring of granular matter, from which roots will protrude; and the point of separation in removing the cutting should be just where the shoot of the present season's growth commences, taking a thin slice of that of last year's growth attached to it; or if at a more advanced period of the season, and in the case of plants which make two growths in the year, taking a

small portion of the wood of the first growth, which will have attained a pretty firm consistency, and in general be of a brownish or darkish color.

All soft-wooded plants not having too much pith will root freely if so taken off. But there are others which are commonly denominated hard-wooded, that root under all circumstances with difficulty. With such plants it has been proposed to remove a ring of the bark previously, and where this operation has taken place, a callus will be formed, and if then separated from the parent and inserted in the ground, roots will be produced. Some hard-wooded plants take a year or upwards to strike root, and some would perhaps never root at all if kept planted in mold in the middle of the pot, even if of the kind most favorable for the plant, but will root if set in sand, or in mold so close to the side of the pot that the cutting may touch the side of it all its length; and some if so placed that their ends may rest at the bottom of the pot, or on pieces of broken potsherd, placed on purpose. In these latter cases a brisk bottom heat is essentially necessary. Some soft-wooded plants will root freely in bottles of water, and it would be exceedingly interesting to ascertain to what extent this practice could be carried.

The management of cuttings after they are planted depends on the general principle, that where life is feeble all excess of exterior agency must have a tendency to render it extinct. No cutting requires to be planted deep, though large ones ought to be inserted deeper than small. In the case of evergreens, the leaves ought to be kept from touching the soil, or they will damp or rot off; and in the case of tubular-stalked plants, which are in general not very easily struck, owing to

the water lodging in the tube, and rotting the cutting. Both ends may in some cases be advantageously inserted in the soil, as, besides a greater certainty of success, there is a chance that two plants may be produced. Too much light, air, water, heat, or cold are alike injurious. To guard against these extremes in tender sorts, the best means hitherto devised, is that of inclosing an atmosphere over the cuttings by means of a hand or bell-glass, according to their delicacy. These preserve a uniform stillness and moisture of atmosphere. Immersing the pot in earth has a tendency to preserve a steady, uniform degree of moisture at their roots, and shading prevents the bad effects of too much light. The only method of regulating the heat is by double or single coverings of glass or mats, or both. A hand-glass placed over a bell-glass will preserve a very constant degree of heat. What that degree of heat ought to be is generally decided by that requisite for the mother plant. Whatever degree of heat is natural to the mother plant when in a growing state will in general be most favorable to the growth of cuttings.

(To be Continued.)

THE CLIMATE OF GREAT BRITAIN.

The climate of the greater part of England is never seriously cold nor uncomfortably hot—barely cold enough in winter to be thoroughly disagreeable, and not warm enough in summer to give a good variety of vegetable products. Snow seldom falls to a depth of more than two or three inches, and rarely lies upon the ground twenty-four hours after it has fallen. Ice thick enough for skating is a luxury that may be enjoyed once or twice in the course of a whole winter, and even then

it must be promptly made use of, for it never tarries long. The sound of the merry sleigh bells is quite unknown, and juvenile England finds sleds and skates not very useful property.

In the fall, frosts come early, and deciduous trees soon drop their leaves; yet the English landscape never looks dreary in winter. The meadows look green and fresh, even in January and February; and Holly, English Ivy, Box, and other evergreens are so abundant that midwinter is anything but a dull and cheerless season. The English Ivy seems almost omnipresent. Old churches and walls are covered with it; the hedgerows are alive with it; and even the trees are green to their very tops with the dense masses of the clinging Ivy. The average daily temperature of the month of January for fifty years past, at Greenwich, has been about thirty-seven degrees, and the thermometer rarely sinks as low as twenty degrees. A temperature, in the locality of London, of zero, or even of ten degrees above that point, is something that is known only to the oldest inhabitant. During the whole of last winter no ice formed of sufficient thickness to bear the weight of a boy of twelve years; and snow at no time fell to the depth of as much as two inches. That was an unusually moderate winter, however; yet the present one seems likely to be no colder than the last.

When spring approaches the trees begin to bud early, but their advancement is very slow, and, though the new leaves give the trees a faint color of green, even in March, it is fully as late as in our own climate before they are in full leaf. This slow growth of vegetation is one of the remarkable circumstances connected with this generally moderate climate. Wheat looks green and thrifty in March, and in the early

part of July still shows no signs of ripening. The wheat harvest in the south and central parts of England rarely begins before the first weeks of August; in the north, September finds them taking in their grain; and in Scotland a large part of the wheat is not harvested until the early part of October. Potatoes, which, in the United States, come up in three weeks after planting, here take seven or eight weeks in getting above ground. There is a wonderful difference in the approach of spring in the United States and England. The former, when the cold weather is over, the forces of nature, which have been chained for a season, burst forth almost impetuously, and everything rapidly takes a new life, because of the much warmer sun. Vegetation advances by leaps, as it were. In England plant life creeps toward maturity. Winter is a protracted season of our March weather, and when March really comes, the change is not a great one. April is raw and disagreeable, with often cutting east winds; May is cool and pleasant; June is merely warm—no more. In every summer there are numerous days in July—the warmest month in Great Britain—when overcoats are positively comfortable; and there are very few days when fires are not desirable at morning and evening.

Grapes do not ripen well in the open air, and, in general, do not ripen at all unless in sheltered or otherwise favorable situations. Most of the Grapes are raised under cover. Last fall the early frosts overtook nearly all the Grapes that were growing in the open air. Even those that were growing upon house and garden walls failed to ripen. The result of this difficulty of growing Grapes is that they are always very expensive. Good ones are never to be had at less than twenty cents a pound,

but the usual price is higher than that. Tomatoes, also, which grow so easily and are used so universally in the United States, are most years also a hot-house plant in England. Most people have never tasted them. The quality is not good here, and the price is prohibitory. A dealer in West End once told me something confidentially, and much as if he were imparting a wonderful piece of information, that he "had had Tomatoes as low as \$2.50 a bushel in certain good seasons." They commonly sell in market at from fifteen to twenty cents a pound. Sweet Potatoes are unknown in Great Britain. Peaches grow in hothouses, and nearly all the country gentry contrive to raise a few on southern walls on which Apricots, Peaches, Nectarines, and many other fruits are trained; but as an article of general use they are also unknown. Indian Corn does not ripen, except to a very moderate extent in Cornwall, Devon, the Isle of Wight, and a few other parts of the extreme south. In those favored localities they do now and then enjoy the luxury of Green Corn, but it is a very dainty plant even there, and they raise none to spare. Apples and Pears grow well, but only of the more hardy kinds. Our own country furnishes finer qualities, and a manifold greater variety. From what I have said it may be inferred that but a small part of the diet of the poorer classes of the English people is composed of first-rate fruit, and that the variety of vegetables and other garden products is not great.

Another peculiarity of the climate of this country is its humidity. The mean annual rainfall is not one-third as great as in New York, but it rains often, and the air always seems moist. Plants like the English Ivy and the Holly only flourish where there is plen-

ty of moisture, and here they grow in the greatest luxuriance. English people who have passed the heyday of youth seem to me to have a freshness of complexion that is not common with us. This is more especially marked in the case of the women. Doubtless it is largely due to the humidity of the atmosphere. Our American air is clearer, but drier, and perhaps tends to dry up the freshness of the skin, and to tempt the wrinkles of age a little earlier than this moister air of England.

Storms are here seldom accompanied with thunder and lightening. There are, in truth, not many storms, for rain usually comes in quiet little showers, which rarely have an electrical accompaniment. But, as I have already said, it rains often, and umbrellas are extremely useful traveling companions. Mists and fogs are very common.

ORNAMENTAL FOLIAGE PLANTS.

BY W. C. L. DREW.

During the last few years the introduction of what are known as colored foliage plants into the flower garden and conservatory have inaugurated an entire new era in floriculture.

Plants with foliage of various colors, from silvery white to the brightest scarlet, or deepest, richest purple, are now extensively employed by landscape gardeners in decorating the garden, with the best possible effect.

As a rule, this class of plants delight in great heat, reveling in heat and drought, which cause flowering plants to droop and wilt. In California, subject as it is to extreme heat and drought during the greater part of the year, this class of plants must become particularly valuable, as they retain their brightest colors until late autumn.

A few of the finest varieties, which have proved of particular merit in withstanding our summer sun, are the following: *Amaranthus*, embracing a large class of plants, constitute one of the finest families of the ornamental foliage section. They are all propagated from seed very easily. They should never be planted in a very rich soil or their handsome variegations will be dulled.

A. saicifolius, commonly known as the "Fountain Plant," I have tried for several seasons. It is a handsome plant of pyramidal growth, growing about two feet high. Three or four plants grouped together always attract attention. *A. melancholicus ruber* is one of the finest of the family. The foliage is very large and of the deepest blood red.

Canna, of various sorts, are admired throughout the floral world, ranking first in the list of foliage plants. They can be raised from seed, or propagated from division of the roots. Their large finely variegated foliage imparts a tropical appearance exceedingly gratifying to the planter. Of the entire list there are none which I know of that are more certain to give satisfaction.

Coleus are well-known foliage plants of great merit. In a good, rich, loamy soil they make wonderfully handsome plants, which for beauty have no equal among flowering plants. There are several hundred varieties of the *Coleus*, all very fine.

Achyranthes is a very fine plant, but is better adapted for pot than border culture. *A. Gilsoni* is the finest red-leaved plant in cultivation. Foliage *Begonias* of many beautiful and distinct varieties are exquisite for pot culture. They are also fine for border culture. They should be planted where they will be shaded the greater part of the day.

In planting beds with foliage plants,

the best effect will be produced by planting in the ribbon style.—*Pacific Rural Press*.

NUT GROWING.

L. B. Hogue, a *Carpenteria* correspondent of the *Santa Barbara Press*, gives the following interesting information concerning nut culture in that section: Nut culture is likely to become one of the leading features of husbandry in *Carpenteria* at no distant day in the future. The tendency to small farms, the peculiar location of our valley with regard to ocean and mountain, the superior excellence of climate, and a very deep, rich soil, combine to make it the most favored of all favored places for the production of the finer varieties of nuts and fruits common to both temperate and semi-tropical countries.

It is our intention to give in as brief and concise a manner as possible the facts and figures relating to the growing of English Walnuts and Almonds, together with some remarks bearing directly upon the subject, and aside from affording the casual reader an idea of the business of nut culture, it may also furnish valuable information to those who are thinking of planting orchards.

Quite a number of large orchards of nut-bearing trees are already planted in the valley—including the walnut orchards of Knapp, Schultz, and Colby, and the almond orchards of Pardee, Walker, and others. But as these have not yet come into bearing to any extent, we will have to draw our date at present from the only two mature orchards of any considerable size, viz.: the walnut orchard of Mr. Heath, and the almond orchard of Mr. Olmstead. Mr. Heath's orchard contains about 65 acres of bearing trees. They are from 8 to 18 years old, and produced 300

sacks of dry nuts in 1876, and last year 200 sacks. The sacks average 70 pounds each, which gives 21,000 pounds for 1876, and 14,000 for last year—the dry year. At 9 cents a pound the amounts realized were \$1,890 and \$1,260 respectively. Taking the product of 1876 as a probable average—as many of the trees are yet young—the profits are a fraction over \$29 per acre. No very approximate estimate of the expense of gathering could be had, but it is probably about the same as in the almond business.

As the nuts ripen the husk opens like a chestnut burr, and the nuts drop out upon the ground, and once or twice per week, through the ripening season, they are gathered up and placed in a dry-house, or in the sun till they are dry enough to sack. As these trees are planted at various distances, the number per acre is not given. But owing to the continual spreading of the branches, Mr. Heath is of the opinion that they should be set 100 feet apart each way. We have no doubt that they would some time occupy that much space; but as that would allow but a fraction more than four trees per acre, we think that 50 feet apart, which would give a little more than 17 to the acre, would be more economical with regard to time at least, and we believe his trees will average about that distance as they stand.

Mr. Olmstead's almond orchard occupies $14\frac{1}{2}$ acres. The trees are set 20 by 14 feet, which is slightly more than 155 per acre. This, Mr. Olmstead thinks, is a little too close; 18 feet apart, making 135 to the acre, is probably about the proper distance.

The average age of the trees is seven years from the bud, or six years from planting. This orchard yielded 13,275 pounds of dry nuts ready for market in

1876, and 7,000 pounds last year. At 16c. per pound for 1876, and 15c. per pound for the crop of last year, the amounts are \$2,124 and \$1,050 respectively.

Taking the crop of 1876 as an average, for the same reason as in the other case, the gross profits per acre are \$146.50. The expense of harvesting the crop of 1876 was 21 per cent. of the gross receipts, and it is probable that this would about equal the per cent. of expense in gathering the walnut crop.

Both nuts ripen in September and October. The almond orchard is generally gone over twice, and the nuts are jarred from the branches with long sticks and caught in sheets spread under the trees. They are then taken to the shuckers, and afterwards dried in the sun and sacked. The Messrs. Fish own a small orchard adjoining that of Mr. Olmstead, and of the same age, which produces equally well.

In view of the above figures it would appear at first thought that almonds are far more profitable than English walnuts, but to end the subject here would be to convey the erroneous idea, as there are no facts connected with the matter which are not figures, but are just as important.

While the walnut seems to flourish and produce well in almost every location, the almond yields sparsely or fails utterly in many places, and the distance of one or two miles will, in some instances, mark the difference between entire success and total failure; nor is there any perceptible law governing this peculiarity. The only sure way is to test a location with a few trees before planting an orchard.

One other fact in favor of the walnut is, that the tree, once planted, will live for generations, but as it takes eight years for them to come into bearing,

even with the best of care, one has need to begin the business with a good stock of patience. The almond produces at three years of age if the location is favorable.

As these species of nuts can only be grown in favored parts of the country, and as the market is world-wide, the price and demand will probably be about as it now is. They are not a perishable product, and can be shipped any distance without risk or inconvenience, as compared with other orchard products.

THE CULTURE OF THE OLIVE.

The *Bulletin* contained lately a very interesting paper read by B. B. Redding before the Academy of Sciences on the cultivation of the Olive. The geographical distribution of plants is a subject of great interest to California. Some of the most valuable forest trees and shrubs have been brought from Australia and Japan. The Alfalfa, the most profitable grass, has been propagated from seed produced in Chile, where by acclimatization it became well adapted to the climate of California. At least half of the area of California has a semi-tropical climate. The Orange of Sicily and the Grape of Madeira thrive here. The Pomegranate, the Lemon, and the Fig have all been introduced from foreign countries. The Mission Fathers planted the vine, the Olive, and the Pear. These may now be found growing at many of the Mission stations. As far north on the coast as Santa Cruz, there is, or was, quite a collection of Olive trees in the Mission orchard. These were planted by the Fathers about 85 years ago. Many of the Pear trees have been cut down, or have been cut in, and grafted with improved varieties of fruit. But

the Olive tree bears the same fruit as nearly a century ago. The variety was no doubt brought from Spain, with the Mission Grape, so well known but now in a measure discarded for better varieties. It was, however, a wine Grape, and wine was not only produced at some of the Missions, but brandy also. The Olive ripens at Santa Cruz, according to our recollection, in March, in which month the dark berries peeping out from under the gray foliage of the trees were in striking contrast with the back-ground of snow-capped mountains.

Mr. Redding shows that there is a very large area of California suitable for the culture of the Olive. It is not probable that any sudden fortunes will be made at the business. But it is something to have a clear demonstration that the Olive will not only thrive at Mission stations, but on a million of acres outside. It is a slow-growing tree, and men impatient for immediate results will not have much enthusiasm for the business. But fruit-growers have already demonstrated what can be done with the Orange in California. This fruit is sold at this date in the market here as cheap as Apples. No better fruit of the kind is ever found here than the Oranges which come up from the southern part of the State. The best table Grapes in the world are the result of careful culture in this State. But the cuttings for these vineyards were brought from foreign countries. Every year we are made acquainted with some new and choice variety of Grapes which have been introduced in this way. Thus, we have the Orange, Lemon, Lime, Fig, Pomegranate, Grape, Palm, including the Date Palm, and an indefinite number of ornamental shrubs which have been brought from foreign countries. The

Pepper tree, Acacia, and Eucalyptus are all of foreign origin.

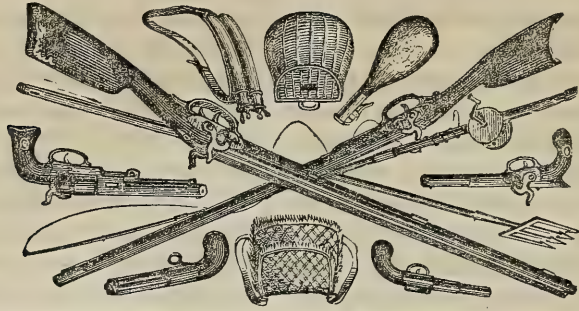
Something is accomplished every year through private enterprise, in the way of acclimatizing plants. But there ought to be a public garden for that purpose. Some useful experiments have been made in that line on the University grounds at Berkeley. If a few acres were devoted at that place to the acclimatization of foreign plants and shrubs, important results might be attained. We know very little as to what plants accounted the most valuable in India will grow in California. It is said that some of the best of the family of gum trees growing in Australia have never been planted in California. When the State was first settled by Americans it was very poor in the variety of trees and plants. The Mission Fathers had accomplished in the way of geographical distribution about all that had ever been done. The gain in a quarter of a century has been great. The State has been enriched many millions by this geographical distribution. But what has been done serves to suggest what ought to be done. If we have gained millions in this way, why not gain many millions more in the same way? Why should not Olive orchards be planted as now orchards of Pears and Cherries are planted? Why should there not be an extensive acclimatization garden somewhere in this vicinity, where the public can have the benefit of all experiments to make foreign plants, trees, and shrubs thrive in California.

A PRETTY WAY TO TRAIN FUCHSIAS.—When a slip has grown six or eight inches high, nip out the top down to the last set of leaves; it will then throw out branches on each side. Let these grow eight or ten inches, then nip them

out as before, the tops of each branch when grown the same height as others, nip out again; then procure a stick the size of your finger, eighteen inches in length; take hoop-skirt wire, twine back and forth alternately through holes made in the stick equal distances apart; place this firmly in the pot back of the plant, tie the branches to it, and you will have, when in flower, a beautiful and very graceful plant. One trained in this way last season was the admiration of all who saw it.—*Small Fruit Recorder.*

THE NORTHERN COUNTIES TURNING THE TABLES ON THE SOUTHERN COUNTIES.—Referring to a statement published in the *Bulletin* to the effect that Oranges are sold in the San Francisco market as cheap as Apples, and that no better fruit of the kind was ever seen here than that which is now coming up from the southern counties, the *Sacramento Bee* adds: "It may not be long, however, before those counties will have to fight for the supremacy. The northern counties can grow Oranges every bit as good and have them in market earlier. The farmers and orchardists in the northern section are beginning to show an interest in the fruit that they had not hitherto displayed."

O. W. CHILDS, of Los Angeles, has some Italian Chestnut trees twenty years old, which each yield 200 pounds of nuts, sold for fifty cents a pound. The *Southern California Horticulturist* says the tree is a large, fine, spreading tree, and requires as much room as the English Walnut. As a shade tree, for stately magnificence, no deciduous tree equals it. The tree begins bearing at four years of age, and bears heavily at twelve.



Rod and Gun.

FISHING AMONG THE THOUSAND ISLANDS.

A day's fishing here is, of course, the backbone of the expedition, around which the day's pleasure is actually built. We will suppose that the party of a dozen ladies and gentlemen is formed, and the day planned for the excursion arrived—a clear, sunny one, with not a ripple stirring the glassy surface of the St. Lawrence. Six boats are hired, a gentleman and lady going in each, under the superintendence of a fisherman. At length the desired spot is reached, and the sport begins, each party fishing as if their lives depended on it, and all internally praying that if a monster pickerel or muskallonge is caught—of which there may be about one chance in five hundred—they may be the particular ones selected by Fortune as the catchers thereof. But whether such a capture is made or not, the fishing is sure to be fine, and so exciting that the dinner approaches almost without notice.

Many, however, prefer solitary sport, or with a company of two or three gentlemen only; and by starting early in the morning, long trips can be made below Grenadier Island. There, in the more shallow portions of the river, striped with long beds of water-grasses, green and purple, undisturbed by the

turmoil and commotion of the passing steamboats, the indolent pickerel lies tranquilly in the secluded tangle of his own especial retreat; or the huge black bass, reaching sometimes to the weight of five or six pounds, stand guard along the edge of the grass, waiting for some unwary minnow or perch to pass. At rare intervals are spots where the savage muskallonge, the tiger of fresh-water fish, lies hidden among the water grasses in solitary majesty. Sluggishly he lies, glaring with his savage eyes to right and left of him, watching for his prey. He sees a minnow in the distance, apparently twitching and wriggling in a very eccentric course; a moment the monarch poises himself, with waving fins, then, a sudden sweep of his majestic tail, and he darts like a thunder-bolt upon his intended victim. The next moment the sharp agony of the fisherman's hook is in his throat. For a moment he lies in motionless astonishment, then, as he feels the line tighten, and discovers he is indeed caught, he struggles with rage, making the water eddy and swirl with the sweeps of his powerful tail, and causing the rod to bend almost double. This way and that he darts, mad with rage and pain, while the line hisses as it springs from the reel; but in vain. In spite of all his endeavors he feels the tightening line drawing him nearer and nearer to the surface. Again and

again he is brought to the side of the boat, only to dart away once more, until at last, sullen, exhausted, and conquered, he lies motionless in the water beside the victorious fisherman's skiff. A moment more, and the gaff strikes his side, and he is safely landed in the bottom of the boat.

"Hurrah! a twenty-pounder!" In June, fly-fishing is employed, and fine sport it is to cast a dainty green or peacock fly so adroitly as to tempt a plump bass in the seclusion of his rocky retreat beneath the overhanging birches along the banks, and fine sport to land him, too; for the bass, lusty and strong through good living and pure water, will battle with the sportsman as vigorously as ever did dappled trout struck in the pools of Maine.

Toward summer the fish become more sluggish, and refuse to strike at a fly, and then "still-fishing," with live minnows for bait, or the less skillful sport of "trolling" take the place of fly-fishing. Of trolling little is to be said. The lines are merely trolled from the stern of the boat, and if the fish bites, unless it be an extraordinarily large one, nothing is required but to haul him in hand over hand, and land him finally, without any skillful handling, in the bottom of the boat.

With still-fishing, however, more skill is required. As a sport it occupies the intermediate point between trolling and fly-fishing, and, should very light rods be used, a great deal of sport may be obtained in playing and landing the fish. Nearly all the boatmen, upon the least encouragement, will recount stupendous stories of 80-pound muskallonge, forty-pound pickerel, or eight-pound bass. The largest fish of which reliable record can be found as having been caught and landed were a muskallonge fifty-one pounds,

a pickerel twenty-seven, and a black bass six and a quarter.

Pleasant are recollections of this river and islands; pleasant for many reasons; but especially pleasant for hours of fishing, and doubly pleasant and delightful for hours of silent, solitary communion with Nature in tranquil bays and spicy cedar woods—communion sometimes as uninterrupted as if we belonged to a different sphere than this earthly one of hurry and bustle; a place of legend and romance, of old associations, an unfailing fountain of interest both in itself and its inhabitants.

FISH OF THE UPPER MISSISSIPPI.

The handsomest pike I ever had the pleasure of capturing was a resident of Lake Pepin. I was sauntering along the base of one of the rocky bluffs of this beautiful sheet of water, and had spent most of the day without success, trying to take a trout with a mammoth fly. I had thrown out my line for the last time, when, as I was carelessly winding it up, I was astonished by a sudden leap of a large fish within twenty feet of me, and in a moment more my line was whizzing through the water in fine style. I humored the gentleman for about ten minutes, leading him meanwhile toward a sand-bar, where I secured and placed him in my canoe. He weighed upwards of twenty-one pounds, was very fat, had a black back and silvery belly.

My best muskallonge (the largest of the pike genus), fishing occurred at a bend in the Mississippi, about 150 miles above the Falls of Saint Anthony. I took them with a spear and by torch-light, standing in the bow of a canoe which was propelled by an Indian. Noiselessly did our birchen torch glide into a thousand nooks of the stream,

like a will-o'-the-wisp, with a couple of deluded followers. I took no note of time on that memorable occasion, and the only thing that prevented me from fishing until morning, was the fog that covered the river about midnight. We landed, however, with a sufficient quantity of fish to supply the whole encampment of Indians for at least three days, and among them were seven specimens of the muskallonge—the remainder being composed of small fry in general. On opening one of my prizes, an immense black snake was found in his bowels, from which time I date my antipathy to this fishy genus as an article of food.

The best, and one of the most universal fish of the Mississippi, is the black bass. They vary from one to seven pounds in weight, are taken with a fly, the minnow, and the frog, and in my opinion, as a game fish, are only second to the trout. They are found in great abundance at all the rapids of the river, but afforded me the finest sport at the Falls of Saint Anthony. When I was there the water was uncommonly low, so that pool fishing was in its prime, and I enjoyed it to perfection. I captured no less than thirty-five superb bass in the space of two hours, and that, too, without once moving the anchor of my boat. I took them with a hand line, baiting with a minnow, and the majority of them weighed over two pounds apiece.

The only respectable trout region of the Mississippi extends from Prairie du Chien to Lake St. Croix. An expert angler may here capture an occasional pounder, out of the river itself; but the rarest sport is afforded by all the neighboring brooks, which run through a hilly country, and are rapid, rocky, and clear. The trout of these streams average about eight ounces in

weight. As I sailed up the Alpine portion of the river in a steamboat, my opportunities for wetting the line were not frequent or particularly successful, as the following illustration will testify.

I had just risen from the breakfast table, when the pilot of the boat informed me that he was about to be delayed for two hours, and that there was a fine trout stream a little farther on, which I might investigate. I immediately hailed a couple of my traveling companions, and with our rods in prime order, we all started for the unknown stream. Owing to a huge rock that lay on the margin of the river, we were compelled to make an extensive circuit over a number of briar-covered hills, and we found the bed of our pilot's trout brook without a particle of water. What aggravated our condition was the intense heat of the sun. In about an hour, however, we succeeded in reaching the Mississippi once more, and there, comfortably seated in the shadow of the bluff, we threw out our lines and awaited the arrival of the boat. We happened to be in the vicinity of a deep hole, out of which we brought five black bass, weighing three or four pounds apiece. We did not capture a single trout, but the sight of one immense fellow that I lost agitated my nerves. Something very heavy had seized my hook, and after playing it for some minutes I was about to land it, when I saw that it was a trout (it must have weighed some three pounds), but making a sudden leap, it snapped my line, and was, like a great many objects in this world, entirely out of my reach; and then I was a victim to a loud and long laugh. The only thing that kept me from falling into a settled melancholy was the incident that immediately followed. When the boat came along, a Frenchman who was a passen-

ger, and happened to have a canoe floating at the stern, volunteered his services to take us on board the steamer. Knowing that my friends had never been in a canoe before, I would not embark with them, and in about two minutes I had the pleasure of seeing them capsized, and after they had become completely soaked, of seeing them rescued from all danger minus the three fine bass they had taken. This feat was performed in the presence of quite a number of ladies, and to the tune of a hearty peal of laughter.

WHO IS RESPONSIBLE FOR THE SLAUGHTER?

A short time since two ladies, mother and daughter, were run over by a horse which had become frightened and went tearing down the street. The young lady was killed. It appears from the evidence that the horse was not hitched, and that the driver had left him for the time being. This act was in violation of the ordinance against leaving horses to stand unhitched and unattended in San Francisco. Had the ordinance been obeyed, the horse would have been hitched, and the life of a young woman would not have been sacrificed. Now, some one is responsible for this neglect. It is not enough to say that the horse was supposed to be gentle. No horse is gentle under some new circumstances. The horse is a very nervous animal, incapable of reasoning to any great extent. A new sight or sound excites him at once. The gentle horse brought in from the country, is terribly excited by city sounds and sights. Even the old family horse will sometimes run away after years of sober service. Experience has shown that there is no safety in leaving any horse unhitched in the city. A sudden alarm of fire, a military specta-

cle, the passing of some new advertising van, or one of a thousand new scenes amid the constant changes of the city, will send a sober horse off on the run. The horse which killed the young lady was considered a gentle one. Yet he was made frantic by the ringing of an auctioneer's bell. Had his driver been near enough to check him and talk to him, he would in all probability have become quiet again. The horse ran away because a reasonable ordinance had not been complied with. We do not care to trace the responsibility any further in that direction. Those who have in this incidental way brought about the death of this young lady have enough on their consciences for the present. But it is pertinent to inquire whether this wholesome ordinance is to be obeyed, or whether we are to go on slaughtering those who suppose that they have some color of protection? There is another ordinance against fast driving, which, except in a few instances, is never enforced; and yet a more reasonable and salutary ordinance was never framed. Drivers of butcher carts, express wagons, grocery wagons, and livery turnouts go tearing along the streets, or racing through the Park, to the danger of the life and limbs of quiet citizens. These in such instances are a violation of the plain letter of the law. Take the testimony of any twenty citizens at random who have occasion to be much on the streets in the prosecution of their business. Nearly every one of them will narrate a number of hair-breadth escapes. The citizen has been obliged to run for his life. The Jehu, as he tears along, yells at him. If he gets out of the way, all right; if not, he is knocked down and run over; and the Jehu thinks he has served the slow-moving, stiff-jointed citizen about right, provided the for-

mer does not get arrested for his reckless disregard of life. And in nine cases out of ten he never is arrested.

Now, are these ordinances to be enforced, or are they to be neglected? Let the police answer this before the last victim is buried, and while the subject has a fresh interest. Is the ordinance against fast driving, now daily violated on every street in the city, to remain a dead letter? Are our citizens to dodge about, taking their lives in their hands every time they cross a street, because some thoughtless or reckless driver prefers to have his own way? It has, probably, never occurred to the minds of this class that pedestrians have the right of way, and that they can not be required at any time to give way for teams, or cross a street at more than the ordinary pace. If citizens would in every case, when they are crowded, cause the arrest of the offending parties, in time, this lawlessness might be curbed. But human life is cheap at present in this city. What is the death of this slaughtered woman to the hundreds who every day violate ordinances made for the protection of citizens? No appeal of a humanitarian sort will ever have any effect on these people. Nothing but the execution of the law—cold and even-handed justice—will check this utter disregard for the safety of life and limb in the city. It may be a disagreeable business for citizens to lay complaints for violation of ordinances. But there is no other way by which they can be enforced. Every citizen who is cognizant of such violations, owes this duty to the community. There are probably three hundred men who daily violate the two ordinances about hitching horses and fast driving. Who is next to be killed by the violation of these laws? —*Bulletin.*

TROUT CULTURE.

Seth Green, State Superintendent of Fisheries in New York, at a recent meeting of the American Fish Culturists Association, gave his experience as follows:

The present popular and successful method of stocking streams is, he said, to plant the fry in rivulets after the yolksac is absorbed. Where the rivulet is very small, deep holes are dug along the banks where the current is not strong. The chief danger lies in overstocking streams. Hatching in a pond previous to planting is good, but below the pond should be a running spring to carry off sediment above. Last year he had set free 10,000 young trout, and raised three-fourths of them until now. He attributed his success to cleaning out the hatching troughs every other day. For the last two years he had impregnated 90 per cent. of the eggs. Now he has on hand 1,600,000 fry to be distributed in the streams in the coming spring. In 1876 he set free a million, and, in 1877, 1,300,000. A large percentage lived. In three years after planting the young in proper waters he has saved 50 per cent. In a small stream near his place 80 per cent. survived. He had experimented with the California mountain brook trout. At two years old they are twice as large as the Eastern variety and are the sauciest, game fish alive; they can whip any other kind five times their size in five seconds. The spots on their sides are black, instead of red. The male impregnates at a year old.

Wild Pigeons continue to be very plentiful in the mountains of Sonoma County.

Trout are unusually abundant this year in the streams of the Coast Range.

Selected Articles.

PEACH BLOSSOMS.

BY BAYARD TAYLOR.

Nightly the hoar-frost freezes
The young grass of the field,
Nor yet have blander breezes
The buds of the oak unsealed;
Nor yet pours out the vine
His airy resinous wine;
But over the southern slope
The wands of the peach tree first
Into rosy beauty burst;
A breath, and the sweet buds ope!
A day, and the orchards bare,
Like maids in haste to be fair,
Lightly themselves adorn
With a scarf the spring at the door
Has sportively flung before,
Or a stranded cloud of the morn.

What spirit of Persia cometh
And saith to the buds, "Unclose,"
Ere ever the first bee hummeth,
Or woodland wild-flower blows?
What prescient soul in the sod
Garlands each barren rod
With fringes of bloom that speak
Of the baby's tender breast,
And the boy's pure lip unpressed,
And the pink of the maiden's cheek?
The swift keen Orient so
Prophesies as of old,
While the apple's blood is cold,
Remembering the snow.

Afar, through the mellow hazes
Where the dreams of June are stayed,
The hills in their vanishing mazes,
Carry the flush and fade!
Southward they fall, and reach
To the bay and the ocean beach,
Where the soft, half-Syrian air
Blows from the Chesapeake's
Inlets, covers, and creeks
On the fields of Delaware!
And the rosy lakes of flowers,
That here alone are ours,
Spread into seas that pour
Billow and spray of pink
Even to the blue wave's brink,
All down the Eastern shore!

* * * *

What fool, to-day, would rather

In wintry memories dwell?
What miser reach to gather
The fruit these boughs foretell?
No, no!—the heart has room
For present joy alone,
Light shed and sweetness blown,
For odor, and color, and bloom!
As the earth in the shining sky,
Our lives in their own bliss lie;
Whatever is taught or told,
However men moan and sigh,
Love never shall grow cold,
And Life shall never die!

—*Atlantic Monthly.*

CULTURE OF COFFEE.

In our March number we copied a small notice concerning the growing of Coffee, which stated that the plant had succeeded in Southern California. We have found from good authority since—William Saunders, Superintendent of the Grounds of the Department of Agriculture at Washington—that he had offered \$10 for one pound of fresh Coffee produced by trees that have grown in the open air for the past three years in the United States, and the reward has not been claimed. The details of the experience of the Badillo Brothers, from Guatemala, who set a Coffee plantation on the Puerte Rancho, in Los Angeles County, had not been published, but the general result was failure, though some of the trees came into bearing. E. Fawcett Rowe writes thus to the *Santa Barbara Press*:

"I have given the subject pretty thorough investigation, and am prepared to assert that the industry will not thrive in this country. Coffee and frost are sworn enemies. There are but few localities in California sufficiently free from the latter to render the successful growth of the Coffee tree in large numbers at all probable. There is a narrow strip of sea-coast country, from Point Concepcion south where upon southerly slopes and back some

little distance from the water, the tree can probably be grown; but the area is very limited. It has been suggested that by keeping the plants in the nursery until two years old, they will then be able to withstand moderate frosts. This is probably not the case. New wood alone bears the fruit of the Coffee tree—the old wood never—and it is quite as tender as the youngest plants. It should not be understood that Coffee requires a hot climate, though it will thrive in such. It is successfully grown upon the cool uplands of the tropics, where the mercury seldom rises above 80 degrees, and never falls below 50 degrees. But there is not now a successful Coffee plantation in the world where there is the slightest appearance of frost.”

Mr. Hittell, of the *Alta*, in his usual editorial on the “Industrial Condition of the State,” in commenting on the above quotation, with his customary intelligence, says:

“Those remarks agree in the main with the positions which we have at various times taken when the Coffee question was brought up. The variety of valuable plants fitted to thrive in the climate of California is so great that there is no need of trying to naturalize here those branches of agriculture, not pursued elsewhere with profit beyond the limits of the tropics. Although the Pine Apple and the Banana have been grown in Southern California, we see no reason to regard their cultivation in the State as anything more than an interesting experiment.

“At the same time we believe in experiments. The cultivation of a Tea or Coffee plant, of a Pine Apple or Banana, of a Guava or an India-rubber tree, does not require much ground or labor, and it may lead ultimately to valuable results. Few places in our

State are free from frosts, but the mean temperature of our January is, we imagine, not too cold for tropical plants, and if by covering our fields with smoke, or otherwise preventing the loss of the heat of the earth by radiation, on those few nights when frosts would otherwise come, the range of our horticulture might be considerably enlarged.”

ABOUT CERTAIN TIMBER TREES.

An essay on “Forest Tree Culture” was recently read before an Agricultural Club at Cornell University. The writer says that the two most valuable trees for timber planting in the West, are the Black Walnut and the White Ash. The timber of both these trees is now in great demand. The latter is used for the interior finish of costly houses and public buildings. If we were to select from timber trees of special importance to California, aside from the Eucalyptus, we should name them in the following order: Black Walnut, English Walnut, White Ash, and Butternut. All these varieties will grow in California, and may now be found in a thrifty condition. The White Ash is a slow grower, but its growth is as rapid as the Elm. We should plant the trees, after they have been started from the nuts, four feet apart each way, and should run a cultivator between the rows, taking as good care of them as one would of a crop of corn.

Not long ago, in looking over an invoice of pianos from Europe, it was noted that a part of the lot which were in English Walnut cases, were valued \$25 higher than the rest, solely on account of the material in the cases, it being held to be more valuable than Rosewood. Three of these timber trees are nut-bearing, and the fourth grows

from seed, and the whole can be procured here at any time. It is not too late to try experiments this year. In fact, the next six weeks will be the special season for all kinds of tree-planting in California. The Butternut, like the Ash, has a very handsome grain, and is very valuable. At present the timber of that tree is so scarce that very little is seen in the market. The three nut-bearing trees are well adapted to this climate. Of the Ash we can not speak so confidently, although, the writer has one about twenty-five feet high and six inches through the trunk, which is growing at a moderate rate—that is, about one-third as fast as the Eucalyptus, or a little faster than the former would grow in the Northern States. It is a very handsome deciduous tree. If some one would try the experiment of these four timber trees on a single acre, the results might be of great value. The best plan would be to plant each quarter acre with one sort, and not mix the trees.—*Bulletin.*

FRUIT ORCHARDS IN THE ECONOMY OF THE FARM.

In the economy of the farm a fine fruit orchard ought to cut an important feature. When once planted and in bearing, trees form a source of revenue which will go far to improve the incomes of the farm. They require but little labor to maintain them in a thriving condition, and they constitute, besides a source of actual revenue, a means of domestic economy which will greatly reduce the current expenses of the family of the farmer. In every respect a fruit orchard is an advantage to a farm. It improves its appearance, and no farm is complete without one. A bare farm which is worth two thousand dollars, ought to be worth three

times that amount with a good orchard on it. While the former would secure a purchaser with difficulty at any price, the latter would be sought for at a round figure. There is something in trees which excites the affections. No man can plant trees without taking in their growth an interest which is very much akin to the interest he takes in the growth of his own children. He will care for them with a tender solicitude, and the more he cares for them the more they will seem dear to him. In this sense tree-planting gives a moral as well as a practical value to the farm. It cultivates the finer feelings, and elevates the sentiment of the agriculturist. It counteracts the spirit of vandalism developed by grain farming, and surrounds the husbandman with friends of his own creation, who remain with him always, and contribute by their products to his prosperity. But there is still another result from tree-planting which ought not to be lost sight of, especially in Southern California. The experience of ages has shown that trees produce a very positive effect upon climate, and that a country which is denuded of them will be subject to droughts, while the one which is well supplied with them will have rain seasons upon which it can count with great certainty. Every fruit orchard planted in this country becomes an important factor increasing the humidity of the atmosphere and in condensing the vapors into rain. So satisfied is science of the truth of this proposition, that governments have taken steps to secure tree planting extensively in arid districts, and have adopted stringent regulations against the wanton denudation of forests. Standing premiums are held out by all governments for the planting of trees, and in this State we have a law which holds out benefits to

those who plant shade trees on the roads aligning or intersecting their lands. The popular movement in this country to plant fruit trees will serve the double purpose of favorably affecting our climate and of adding greatly to the productive wealth of our people.

—*Los Angeles Express.*

PACKING FRUIT FOR THE EASTERN MARKET.

A New York commission merchant has sent to a Napa horticulturist the following rules in relation to the packing of fruit for the Eastern markets, which will be of interest to all engaged in the business :

During the past season we have had quite a number of consignments of Grapes sent out in refrigerator cars, and when pains were taken in putting up large and choice Grapes they paid well. We had some small inferior fruit packed in crates, and the top of them covered with green leaves, which sweated the Grapes and rotted them. And of course no pains being taken to even have a strong package to hold the Grapes when packed in the car, on their arrival here the crates were in a wrecked condition. This occurred in two instances, and the result was unprofitable to the shipper. An open crate with four or six trays weighing five pounds to each tray, when made strong has proved the best way of packing them. And do not put anything over them. Our Eastern people always expect to get large and handsome fruit from California, and if you want to get good prices, select the largest and best to send East, as the freights are high, and unless the fruit is fine we can not get high prices for it. Another point you want to remember, which often occurs in putting up a car of fruit. After

packing about two-thirds of a car you find you have not got enough to fill it, and unless you put in some you did not intend to send, as it is poor, and rather than take pains to get better you send it forward. Now, that is a great mistake, as you are paying freight on an article that will reduce the profit on your good fruit, and often reduce the entire margin on a car-load.

Strict attention should be given to selecting and packing the Grapes. Do not leave it to your men, who do not understand the importance of such care, to insure its safe arrival in the far off market. If you send by a refrigerator car, you should see that the ice is put in, and the car chilled before the fruit is put in. And do not wait to fill your car with fruit and let it stand in the hot boiling sun five or six hours before you put ice into it.

As to the best varieties to send, the Muscat is the best white; the Tokay is the best of the colored; while the Black Morocco, Black Prince, Purple Damascus and Emperor sell very well. In filling a car it is much better to put in a number of varieties if possible, as it helps to sell them quicker. An assorted car-load, even if you have some other choice fruit, that will keep as well as Grapes—Plums and Pears, for instance—is desirable and commands good prices.

In regard to prices, if the fruit came in good order and large berries, we sold Tokays as high as \$6 per 30 pound crate. That is an extreme price, however; but it is safe to put the range from \$4 to \$5 for Tokays, Morocco, and Prince, and for Muscats at \$3 to \$4, if in prime order, but they are not so good keepers as the colored Grapes. We had a white Malaga that transported better, but nothing like as good a Grape.

The demand for Plums of large size is very great, and the price ranges from \$4 to \$5 for 20 lb. boxes. In Pears the late varieties are more profitable, as they can be sent by freight at a much less expense.

A PRACTICE THAT NEEDS REFORMING.

It is not an uncommon thing when consumers or retail dealers open a box of fruit or berries or a sack of potatoes to find that the finest and largest have carefully been packed on the top, while the smaller and irregular specimens have been as carefully placed at the bottom of the packages.

In the first place this is a very dishonest practice; and in the second place, instead of working to the advantage of the producer, it will generally work to his disadvantage. It is, in fact, no less a fraud than selling by sample, and uniformly making the sample much superior to the article sold by it. The top fruit of potatoes are, or should be, a sample of the bulk in the package, and the buyer has a right to insist that they shall be, or no sale. If the question were submitted to the Courts, such would be the legal and equitable decision.

No producer can defend such a fraud on the ground that it is the custom. The dealer or consumer who is once deceived in this way by a producer will be pretty sure to buy of some one else next time. This question has been under judicial investigation in the city of Chicago, and the decision, as it must always be in such cases, was in favor of uniformity of produce on the top and all through the package.

It has also been followed up by the Common Council of that city in the passage of an ordinance regulating the kind of packages used and the

manner of filling them. We give an extract from the ordinance passed there, with the remark that such an ordinance or regulation would be beneficial to trade in this city, as well as to the producing interests of the country:

Be it ordained, etc.: Section 1.—All fruits and berries sold or offered for sale within the city of Chicago to consumers or to retail dealers within said city shall be sold and offered for sale only by barrel, bushel, or some aliquot part of a bushel, according to the table of dry measures, or in packages which contain in full measure a barrel, a bushel, or some aliquot part of a bushel, according to the table of dry measures, or by the pound; provided, that for fruits the package known to the Chicago market as a third of a bushel box may also be used; and provided further, that this section shall not apply to dry, preserved, or pickled fruits or berries, or to the sale of fruits retailed at a fixed price per piece or number.

SEC. 2. All fruits and berries, fresh or dried, sold or offered for sale in the city of Chicago in packages shall be substantially of equal goodness in every part of the package; any package of fruit packed so as to be in violation of this section shall be subject to seizure and condemnation by the health officers of the city as deleterious to public health.

The above sections are followed by one imposing a fine for their violation.
—*Bulletin.*

RARE FRUITS.

From a catalogue before us we take the following list of rare fruits which are cultivated in this climate. This list could be extended, but we are not in possession of sufficient data to make it complete:

Japan Persimmon—(*Diospyros Kaki*.) Native of Japan; tree medium size; highly ornamental, with wood like ebony; bears in two years; fruit reddish

yellow, size of an apple ; ripe from October to January ; pulp very luscious and melting, resembling the peach and the strawberry ; may be dried like figs ; bears shipping ; hardy as the apple, and promises to be one of our leading fruits ; has fruited successfully in various localities in California.

Grape Fruit.—A variety of the Shaddock but much finer ; flesh deep pink, very sweet and delicious. Lately introduced into Florida, where it is much esteemed, and where it readily sold the last year at 25 cents each.

Sweet Sop—(*Anona squamosa*).—Native of South America ; a small tree ; fruit greenish yellow, very delicious, tasting like clotted cream and sugar, with the odor of rosewater ; the finest of all the *Anona* family.

Sour Sop—(*Anona muricata*). Native of East and West Indies ; fruit large, greenish yellow ; pulp sweet, with a most agreeable cooling acid.

Custard Apple—(*Anona mucosa*). Native of West Indies ; fruit large, orange color, with a sweet yellowish pulp, of the consistency of custard ; highly prized as a delicacy.

Cherimoyer—(*Anona cherimolia*). Native of South America, ten feet high, flowers green and fragrant ; fruit large, rough and dark brown ; pulp soft, sweet, and very agreeable.

Mammee Sapote — (*Lacoma mammosa*).—Native of South America ; the fruit is large, covered with a brown, rough skin ; pulp soft and very luscious, resembling quince marmalade.

Sapodilla Plum—(*Achras sapota*). A tall, straight tree ; fruit pear-shaped, greenish yellow ; sweet granular pulp ; much esteemed.

Tamarind—(*Tamarindus indica*). Native of the East Indies ; the medicinal Tamarind of commerce. One of the handsomest of all tropical trees.

Banana—(*Musa Cavendishii*.) Native of China ; five feet high ; fruits in ten months ; bears slight freezing ; is successfully cultivated in Southern California in warm and sheltered places.

Date—(*Phoenix dactylifera*.) The successful fruiting of this stately Palm in California shows it to be well adapted to the soil and climate of this coast.

Loquat or Japan Plum—(*Eriobotrya japonica*.) Native of Japan ; a small tree ; fruit fine, yellow ; size of a plum, sweet, and in quality resembling the mango ; fruited well in California the past year.

Pomegranate Dwarf. — A beautiful little shrub with bright scarlet flowers ; a constant bloomer ; fruit much more brilliant and quite as cooling and agreeable as the common Pomegranate ; a very pretty hedge plant.—*Southern California Horticulturist*.

PROPAGATING ROSES.

My only experience in budding Roses thus far has been cut fingers, for the point of the knife so often slips around the cane into my fingers, and there never has grown one single bud that I have set. I am sure my forte is not in that direction. So some one else will have to recommend budding. With cuttings I have always been successful. The year before last I raised about thirty plants. They had bloomed nicely in the beds, but when the first rain came last winter I set them out, and not having rain enough to root well they died during last summer's hot winds. I have now over 200 planted, and there are not a dozen of them that have not put out nicely already. Some have leaves on, and one has a nice bud, and I think will bloom shortly.

I take the wood for cuttings always

at least a year old (but not often over two years), before they commence putting out new growth in the winter. It depends on the rains if they are early or late. I like to get them in by the second good rain, so the ground is nice and moist. Cut off all the leaves carefully; cut the canes in pieces from eight to ten inches long; have the ground well cultivated; put the slips into the ground in rows about six inches apart each way; put them underground, all but two or three buds. I think they grow a little better if the bed slopes toward the south, and the slips are set in slanting, the tops toward the north. The temperature is a little more even, as they get the full benefit of the sun's heat all day. Grape cuttings grow best this way too.

If I find the ground is baking too hard I work it up carefully with a table fork or small trowel, taking care not to touch the Roses. If I see they need irrigation during the summer, I give them rain water, if I have it (but well water will do), but not too often.

I sent to Dingee & Conard's for some Roses this winter, and they are doing finely. I never saw any sent in better condition, they are so careful in packing, and always send such healthy plants.

I have raised Spireas, Weigelia rosea, Syringa, Jessamines, etc., in the same manner, both in California and in the Eastern States. This plan I have followed for the past fifteen years. It is well to put in several cuttings of each variety, so if they don't all want to grow they can let it alone; but some generally do want to grow, so you will be certain to get one at least. A great deal depends on the weather and atmosphere. This is a good year, but year before last they grew better.

I like Roses best on their own roots.

If anything happens to the top, as long as the root lives the sprouts will come up the same; but if the top of a budded plant is broken off below the bud, you have lost your Rose. Some varieties are much more difficult to get to grow than others. The Cora Berton, Glorie de Rosemond, Agrippina, Hermosa, Lady Washington, and the La Marque are among the willing growers. —*M. H. in Pac. Rural Press.*

DECORATIVE PLANTS FOR WINTER.

In several papers, including the *Tribune*, I have seen a list of such climbing plants as may be grown successfully for parlor ornamentation, among them the Cobæas, Ivies, Smilax, Maurandya, etc.; but one that has done better service to me than any of those mentioned is the Madeira Vine. First, it is unmolested by insects. While red spider is destroying the Smilax and Maurandya, and scaly bug is on the Ivies, and aphids and thrips preying upon other plants, freedom from all these are seen in the Madeira. People who know it only in its luxuriance, out of doors, would be surprised at the delicacy of its leaves, the pliancy and gracefulness of the vine in the house. Exposed to the full sun perhaps it would grow too rank, but for a place not sunny, though well lighted, it is admirable. It grows very freely, needing only a thread, almost invisible, to sustain it, by means of which it can be made to run on the wall, embellish pictures, brackets, statuettes, or whatever one may choose. After doing duty through the winter, it is often considered far more beautiful to remove in the spring, and will continue to grow and beautify the place where it stands during the summer, only that one feels after a season that it is time to cut it down and give the plant an opportunity for repose.

In planting a window garden seek ornamental foliage rather than very many flowering plants. True, every blossom is precious in winter, hence the more Carnations, Primroses and other flowers that one can have the better. Still, the choice between a handsome plant having brilliant leafage, and an ugly looking one having poor leaves but pretty blossoms, must be decidedly in favor of the former. A Begonia Rex is better than a Petunia. All flowering Begonias that I have seen are far less desirable than those grown for the variegation of their leaves. A *Dracena terminalis*, a small Tree Fern, or a tri-colored Geranium, looks much nicer in the window than a Rosebush, a Daphne, or a Cactus, especially when these cannot be coaxed into blooming. It would be unfortunate not to have a few flowers, enough for the crowning grace of the collection, but for the continuous, quiet beauty of a window garden, let broad-leaved ornamental foliage be the main reliance. Happily some plants have beautiful leaves and flowers also; thus far they are well adapted for parlor use. We can fill our window-box, if we choose, with plants of finest, rarest foliage, and then add brilliant flowers, such as Duc Van Thol Tulips, Early Tulips, Hyacinths and Crocuses. By cultivating these, each bulb in a separate pot, bringing them into bloom, and disposing them around among the plants, concealing the pot as far as possible, we shall secure all that is desirable in the way of beauty, color, or fragrance.

An Amaryllis that blooms for a month in mid-winter may give much satisfaction, the flaming scarlet of its blossoms may be toned down with silver-leaved Geranium on one side, and Crystal Palace Gem on the other, while the delicate colored foliage of the plants

will be heightened in effect by the contrast. To secure this bloom intelligent cultivation of the Amaryllis is necessary, but details of the treatment would require a chapter by itself. Plants suitable for a single pot, bracket or vase, are found in great variety; all flower growers know what they are—Callas, Fuchsias, Caladiums, etc. Well cared for, almost any plant looks well; neglected, the best of them become a nuisance. Even the *Sedum spectabile* makes a fine window plant by putting it in the cellar in autumn, repotting and bringing it into the sun in January. It soon grows up from the stools, branches out and spreads itself, while every leaf, of a rich cream color, edged with green, and slightly curled, is as handsome as a shell. Gardening is very much like housekeeping in this—more or less of the individual will be expressed therein. If one has nice perceptions of color, contrast and harmony, and is deeply imbued with a love of her subject, she needs but little instruction from art critics to arrange her plants gracefully and her home with refinement.—J. E. J., in *Tribune*.

EATING FORBIDDEN FRUIT.

A good story is told at the expense of two Western members of Congress, who, having secured orders for bouquets from S. S. Cox, Chairman of the Committee on Books and Bouquets in the House, delivered the same, and while waiting to have the nosegays made up, meandered idly through the conservatories of the botanical gardens. They came upon a tree having red berries thereon, and, like Adam and Eve, were tempted to eat. They tasted it, and found the fruit pleasant to the mouth, and went on helping themselves till one of the men employed in

the place gave them the law, which prohibited plucking of fruit or flowers. The gentlemen, feeling they were privileged, paid no attention to the remonstrance until the man, somewhat irritated, said:

"Well, gentlemen, if you will eat, you had better select some other fruit, for that is a deadly poison."

This was a lie trumped up for the occasion; but you should have seen the startled faces of the legislative raiders. They fled in terror from the place, without taking order on their going, or order on the bouquets. They were heading for the nearest apothecary's shop, when one of them cried:

"There goes Dr. Garnett—stop him!"

The popular physician was hailed, came to a stand-still, heard the horrible story, and, tumbling out his colored driver, carried the law-makers to the nearest apothecary's, and then began the medication. Heroic doses of an emetic were administered, and while the poor Solons were in intense agony, throwing up their boots, that canny Scotsman, Smith of the botanical gardens, was sent for. Then the fact came out that the berries were as harmless as haws; whereupon everybody haw-hawed but the sufferers, who hurried to their hash-house to refill their exhausted stomachs.—*Don Piatt's Washington Letter to the Cincinnati Enquirer.*

A BLADE OF GRASS SEVENTY FEET HIGH.

The bamboo, as those who have studied the elements of botany know, is counted among the grasses. In its native climes it grows to the height of from thirty to fifty feet, and some species occasionally attain an altitude of eighty or even a hundred feet. It is certainly remarkable that the plant would grow seventy feet high in an

English hot-house, but this has recently occurred at Syon House, the mansion of the Duke of Northumberland, near Twickenham. The *London Gardeners' Chronicle* says:

The veracious author who compiled for the children of all time the fairy story of "Jack and the Beanstalk" unfortunately omitted to tell his readers in what clime was situated the *locale* of the remarkable growth which he chronicles, or what kind of bean it was that thus enabled Jack, by its extraordinary vegetable development in a single night, to ascend to a new and unknown world. . . . What plant is there that combines marvellous rapidity of growth, direct ascension, and strength of wood so fully as does the bamboo of India, the land of tradition and of fable? certainly not ascending to the clouds in a single night, but producing an upward development that is truly astonishing in its rapidity. If the fabled Jack had the skill in climbing that most modern Jacks possess, he would have found it comparatively easy to have worked his way to the summit of that wonderful bamboo mast now to be seen in the tropical-house at Syon, which is as big round as a good-sized scaffold-pole, and about seventy feet in height. This superb shoot has developed a growth of over sixty feet in three months, and having reached the top of the glass dome has now been forced to bend its point downwards, as though, like Wolsey, it had reached the highest point of its career long ere its course was done. This wonderful stem is at least twice the size of any other shoot from the same plant, and deserves to rank among the marvels of vegetation in our exceedingly ungenial and eccentric clime.

HOLYOKE makes nearly half the fine writing paper of the country.

Editorial Portfolio.

OUR FRONTISPIECE.

CALIFORNIA TULIP (*Cyclobothra pulchella*.)

We present our readers this spring month with a frontispiece, engraved and colored from nature, of one of the most beautiful wild flowers of San Joaquin valley and other parts of California. It belongs to the tulip family, and is properly called the California Tulip, as its species are natives of our State.

The species engraved here is of a light yellow, or straw color. Though reminding one at first of the California Poppy, it can be readily distinguished from the latter by the fact, that it has but three flower leaves or petals, while the poppy has four, besides which the poppy or *Eschscholtzia Californica* is of a vivid orange color instead of yellow. Another means by which those at all acquainted with botanical terms can distinguish them is, the tulip has only six stamens. Again, the tulip is bulbous, the poppy not. The yellow tulip grows on the hard, knolly land of the valley, and also in the foothills of the Sierras.

Two species besides the yellow are found in the same localities, differing chiefly in color. In one, the flower leaves are of a greenish white, most of the inner surface sprinkled as if with a purple powder. It has also a large purple spot near the base of each petal, on the inside, resembling in shape and appearance the eye of a peacock feather. A third kind, which is found only in the mountain districts, is of a light purple or lilac color, having a darker spot or eye, in the inner surface of each flower leaf, like the species just described. These tulips when open measure from one to two inches across the mouth of the flower. Each plant sends up from a bulb a single stem one or two

feet high, producing from one to four flowers. The leaves are few and short, forming sheaths around the base of the flower-stems as represented in the plate.

The Latin, or systematic names of the three species mentioned above, are *Cyclobothra pulchella*, the yellow kind—*pulchella*, meaning beautiful; *C. alba*, the white; and *C. purpurea*, the purple tulip. A fourth kind belonging to California, but which we have not yet found in San Joaquin valley, is *C. monophylla*, or one-leaved tulip, which is described by botanists as having bright yellow flowers, three in number, a single leaf, and a stem less than a foot high.

The name *Cyclobothra* means *circular pit* from the Greek *kyklos*, a circle, and *bothros*, a pit, and was given to this flower by Robert Sweet, an English botanist, in allusion to the round hollow formed by the lower portion of the flower. By an examination of this pit in any perfect flower of the kind, one will see that it is almost an exact hemisphere.

The upper edge of this pit in each species is heavily bearded. A common name among children in the mountains for these flowers is *cat's ears*, alluding to the shape of each flower-leaf.

Beautiful as the California Tulip is in its wild state, it could no doubt be much improved by culture, and is well worthy of a place in our ornamental flower gardens. The *Cyclobothra* is allied to the genus *Calochortus*.

PUBLICATIONS RECEIVED.

"The House Sparrow, at Home and Abroad," with some concluding remarks upon its usefulness, and copious references to the literature of the subject. By Thos. G. Gentry, Philadelphia. Claxton, Remsen & Haffelfinger. Price \$2, with colored plate. We have

for some time been of opinion that the introduction of the sparrow is, on the whole, calculated, sooner or later, to work mischief whenever it increases so much as to spread into the country, whatever good it may effect in ridding shade trees in cities of caterpillars and insects. To give our readers a fair idea of the scope and aim of the book we quote from Mr. Gentry in the preface the following passages :

"In view of the many heated discussions which the sparrow has produced in this country tending to show its general usefulness or wholesale destructiveness, a careful and critical survey of its life-history, detailing the minutest particular thereof, can not fail to awaken and to command respect. Agriculturists and fruit-growers mainly of all others will certainly reap the first fruits of such knowledge. The facts which the writer has gleaned from various fields of observation, but largely from his own, at infinite pains and expense, subserve in the highest degree the interests of humanity, and should not be carelessly set aside. With the disappearance of our highly insectivorous native species before the rapid and insolent advances of their hardy foreign brother and the consequent multiplication of insect foes, must come the destruction of vegetation and the entailment of untold misery upon man and beast. The sparrow itself, by reason of its almost exclusive grain-eating habits, will assist in bringing about this much-to-be-regretted condition of things. He must be a fool who can close his eyes to the fact. Wherever we turn evidences of its baneful influence confronts our vision. We can not escape it. The writer would say that his only plea for writing this history is that a more general knowledge of the sparrow's odious practices, which are mani-

fold, shall be brought before the tillers of the soil and growers of vegetables. Further to awaken attention to the growing evil in the confident expectation that it may be instrumental in the adoption of practicable means for getting rid of the intolerable nuisance."

"Vick's Illustrated Monthly Magazine" for last month (March), is on our table. It is as beautifully illustrated as the January and February Nos. Its frontispiece is a splendid colored picture of the Gladiolus. There are illustrated papers on Methods of Propagation of Plants, Lawns and Lawn Trees, Opinions of Vegetables, Lilies in Pots, The Chinese Primrose, The Yuccas, The Water Lily, Hygienic Influence of Plants, The Chinese National Flower, The Tuberose, Window Gardening, The Green Fly and Scale Insect, Treatment of House Plants, etc. This useful, interesting, and finely embellished magazine should be in the hands of all lovers of flowers. Its price is only \$1.25 a year.

"R. J. Trumbull & Co.'s Vegetable and Flower Garden and Catalogue of Fruit and Ornamental Trees, Shrubs, Bulbs, Plants, etc.," for 1878. Seed warehouse, Nos. 419 and 421 Sansome Street, San Francisco. Nursery, corner H and Center Sts., San Rafael. Mr. Trumbull, in his introductory, says truly :

"Agriculture and horticulture are now recognized as the most substantial and safe industries of the State, and so strongly is this conviction held that it will require a drier season than the past, and more of them, to shake it. Nor is it in the immediate vicinity of San Francisco (the Bay counties) where capital is only invested, and a thousand 'country homes' made beautiful, because of the tasteful expenditure of

money on them, but far away in the interior, up in the foot-hills, the native tree is falling, to give room to the Apple and the Orange, while the land of the tule is being won over to the production of wheat and corn, and rivers long running to waste are now fertilizing thousands of hitherto desert acres, yielding golden harvests from fields of perennial green." Now that we have had such a succession of abundant rains this year, the above statement may be said to be likely to be even more completely confirmed. Horticultural improvements in our State are now going on at a still greater rate this season than ever before.

"Carrots, Mangold Wurtzels, and Sugar Beets. How to raise them, how to keep them, and how to feed them." By Jas. J. H. Gregory, author of "Onion Raising," "Cabbage Raising," etc. A neatly printed and illustrated exhaustive treatise of 61 pages on the above subjects.

"The Garden," a weekly illustrated journal of horticulture in all its branches, 37 Southampton St., Covent Garden, London, 1878, with an exquisitely drawn and splendidly colored plate of the large white Japan Quince, *Cydonia Japonica* (Pers.) var. *alba Grandiflora*. Containing, also, an illustrated chapter on Garden Botany, etc.

"Annual Circular and Retail Catalogue (illustrated) of Warranted Vegetable and Garden Seeds," grown and sold by Jas. J. H. Gregory, Marblehead, Mass., January, 1878.

We desire to announce to those of our patrons who love and cultivate beautiful flowers, that we have received from Joseph W. Vestal, of Cambridge City, Indiana, his "Wholesale Catalogue of New, Rare, and Beautiful Plants and Specialties in Roses, Gera-

niums, Fuchsias, Bedding and Hardy Plants, Flowering Shrubs and Vines, Small Fruits, etc." Those who love and cultivate flowers or plants should obtain one of these catalogues, which will be sent free on application. His prices are reasonable, and all orders are promptly filled and shipped to all parts of the country by mail or express, guaranteeing them to reach their destination in good order at all seasons. He offers you the rare opportunity of buying your plants at wholesale rates, quite an object in these times.

SOUTHERN HORTICULTURAL SOCIETY.

The flourishing condition of this Association, as set forth by the *Southern California Horticulturist* at Los Angeles, ought to put to shame the horticulturists and people of San Francisco, in this richer and more densely populated portion of our State. It casts a severe stigma upon our cultivators of fruits and flowers, and the members of the Bay District Horticultural Society especially, who, for want of interest in it, and for other causes, allowed that institution to become virtually defunct. The Horticultural Society already numbers over 360 members, although established only one year. It has nine standing committees on Semi-tropical Fruits, Northern Fruits, Viniculture, Raisins and Table Grapes, Irrigation, Legislation, Exhibitions, Publications and Library, and Nomenclature, besides ten local committees for Los Angeles and vicinity, inland valleys, Santa Ana Valley, Los Angeles Co., Moist Lands, Riverside, San Bernardino, San Diego, Santa Barbara, Ventura, and Kern counties. The Society holds monthly meetings "to collect and distribute information in regard to horticulture, agriculture, and pomology ; to

hold exhibitions and award premiums for the best productions; to discuss the varieties of fruits and other products, best adapted to its district, and the best methods of cultivating and propagating the same, and to seek the best market for the fruits and other products when raised."

The February session of this Society discussed the subjects of Northern Fruits, and the question whether viticulture for wines, etc., should be retained or abolished in the Association, the latter question being referred to a committee to report at the next meeting.

In the March number of the *Southern California Horticulturist* there is a valuable paper on Raisin Making, by Dr. C. H. Congar, and seventeen judicious articles comprising the By-Laws of the Society. Every member of the Society is entitled to a copy of the *Southern California Horticulturist* free of charge, and all the members and their families have free admission to all exhibitions of the Society. Last October there was holden, in the words of the *Southern California Horticulturist*, "the most successful fair ever held in that portion of the State; although the financial outcome of that enterprise was not as satisfactory as could have been desired, but when all the difficulties under which we labored are taken into consideration all should be satisfied that the result was no worse."

The Society now has of collectable assets about \$400—enough to pay present indebtedness, and leave a fair surplus.

We have given these particulars to show how well they have commenced in these matters, so important to the community, in the southern portion of our State, and to serve as an encouragement for us to go and do likewise.

How we would take delight in seeing our Society here again renewed, perhaps with some modifications and improvements, with a small initiation fee from members, and monthly dues of fifty cents, each holding a meeting in the afternoon of a Saturday of each month. There should be sufficient amateur members, lovers of flowers and fruits, to form the main strength and influence of the Association, backed by all our intelligent and practical professional florists and nurserymen. We might take good pattern from our southern horticultural brethren in many things, because they have carried out their design with fair and commendable success in a very short space of time. Sooner or later, at any rate, an institution similar to theirs must surely be carried into execution here. Our old Society possesses a small collection of books on kindred subjects, and a small room at a low rate—say ten dollars per month—could be hired, and this apartment would furnish the nucleus for both the library and free reading, and a few agricultural and horticultural periodicals, and contributions of these and books would be constantly received from publishers and others. Let all devotees of floral beauty, and business florists and nurserymen think seriously of this matter, and become prepared, as soon as possible, to carry these beneficial objects into effect. We will conclude by stating that that eminent pomologist and cultivator, Dr. J. Strenzel, of Martinez, says: "The February number of the *Southern Cal. Horticulturist* is very interesting. Your working committees are of the right stuff to benefit the country, and benefit themselves."

REMEDY FOR RANK GROWTH OF FRUIT TREES.—A number of our friends who

have planted fruit trees complain that, while their trees grow with exceeding vigor they produce little or no fruit. We have taken pains to inquire into the matter, and from good authority learn that where trees grow too fast they are liable to produce little or no fruit. The remedy for this is to prune out the tops if the growth is too dense, so as to admit the sunshine, and then uncover some of the main roots and cut them off within a few feet of the tree. This, we are assured, is a sovereign remedy.—*Fresno Expositor*.

FRUIT CULTIVATION AND REPORT OF FRUIT AND VEGETABLE MARKET.

It is a matter of surprise to witness often the indifference manifested by many of our farmers, and especially wheat farmers, on the subject of fruit, while in other respects their farms are tolerably well arranged. We lately asked an acquaintance somewhat advanced in life why he did not plant more fruit trees. The answer was, he had enough to answer his purposes, and the young folks must do as he had done, and look out for themselves. This is a false principle, an immorality; it is a violation of the Golden Rule; it is not "doing unto others as we would that they should do unto us." If our predecessors have transmitted enjoyment to us we should do the same to those who are to come after us. Not only those who are engaged largely in farming are neglectful in this respect, but what is more surprising, those who possess small lots of land are too prone to follow the example of the above selfish farmer. Every one who has a small lot can plant a few trees, and in a short time, perhaps shorter here than in any other part of the world, he may have the pleasure of eating the fruit of his own labor. In regard to the varieties

of fruit most advisable to cultivate, farmers must be governed by circumstances. But in all the best catalogues of the nurserymen near our large cities, they may find a list of all the best fruits adapted to our soil and climate. The most important, of course, is the Apple, and those residing at a distance from the nurseries or from market, should cultivate such fruit as is from time to time maturing in succession through the season.

Much reflection and extensive observation have fully satisfied us that it is to the interest of the community to sustain public nurseries, conducted by persons of knowledge and established reputations of intelligence in their profession, and of high moral integrity. Nothing can be easier than to cheat a man in a tree, and hence no man should trust himself to buy or deal in the article with any other than an honest man. The greatest fraud may give his trees or grafts "a great name," and thus deceive his customers. Individuals can not well do their own grafting, and if they could, few have the leisure or inclination to undertake the drudgery of thoroughly studying the subject, and collecting from every available source the best kinds, not to mention the very considerable expense attending it. The public nurseryman should perform all this. He should do more. He should plant on his own ground all the most approved kinds, and demonstrate to the public which are the very best for the various purposes desired. He should go further, and commence the originating of varieties, highly adapted to our climate and soil. Be assured that nothing pays better for the most careful and diligent cultivation than fruit trees. Do not let the young trees which you have transplanted about your farm or lots be browsed by your cattle; take

good care of them, and, if necessary, manure them well, and you will find your reward. Nothing can be done without thorough cultivation in our dry summer and fall. This will, in a great measure, obviate the want of rain. The sod should never be left to grow and bind about young trees especially. Where the soil is naturally very rich, or where manure is plenty, a crop of potatoes or other root crops may be had from the ground of the orchard, but this is to be borne in mind, that the more you take from your orchard and impoverish it, the less vigorous and healthy the trees will be, and the longer in coming into good bearing.

Cultivate chiefly winter fruits, and always, of course, of the best kinds. It costs no more to rear and take care of a tree which will produce several barrels of Apples or Pears that will keep through the winter, and sell readily for a good price, than it does to give room to one that merely cumbers the ground.

As respects the markets, about the middle of last month (March) the stock of California Apples on hand was very small; supplies mostly were coming from Oregon — choice varieties were held at firm rates. Oranges were more plentiful and in fair demand. Limes were in plenty. Pears were nearly gone out of market. Howe & Hall were in receipt of a car-load of Lemons from New York. Fresh supplies of Bananas and Cocoanuts arrived from the Islands. The *Commercial Herald* stated that, by reason of serious wash-outs on the Southern Pacific Railroad, the Los Angeles steamers have been bringing us up fair supplies of Oranges, Lemons, Limes, etc., soon, however, the road will be in running order, when we will be in receipt of daily supplies of California Oranges. This year's fruit seems to be superior to that

formerly marketed. We have a large stock of California Peanuts, and they can be bought as low as $3\frac{1}{2}$ c. to 5 c., according to quality. Common Dried Apples are also very plentiful, and they, too, can be bought in sacks as low as $3\frac{1}{2}$ c.; and so, also, of several other articles in the line of which we have a surplus. California Raisins are also in excessive stock, and many lots that are not strictly choice in quality will have to be sold for a song before the summer is over. At this date we have nothing cheering to remark respecting spot markets for any description of goods usually treated of under this head. There is quite a business stagnation all over the State. Early in the winter this was attributed to the fear of a dry season, entailing short crops, etc.; but now we have too much wet, heavy rains and floods, with every indication of large crop yields, yet trade languishes. We are, however, very sanguine that we are to enjoy a year of great prosperity and considerable business activity in 1878. Supplies of Malaga Raisins are liberal, and with a good home stock prices rule low. Currants, Prunes, etc., are in fair supply, but the very liberal home product interferes materially with their sale.

About the beginning, and also towards the middle of last month (March), several lots of Strawberries appeared in the market. The first baskets demanded \$2 per lb, and were the best in quality; the second specimens were very small and inferior quality, and all the lots partook much of that inferiority of size, color, and flavor which are consequent on the early season. No doubt we shall have, at first, owing to the long continuance of the rains, allotments of this favorite fruit which will have had no artificial irrigation, and with a warm sun following the watering of nature,

will possess good size and fine flavor.

According to the always careful and accurate reports of the *Commercial Herald*, two weeks since:

Two steamers from Portland arrived with 1,925 boxes of Oregon Apples; those sold at auction brought \$1.40 to \$2.25 per box—nearly all the stock arriving being of inferior quality. The steamer St. Paul from Honolulu brought with it 468 bunches of Bananas. The Mexican steamer brought a light shipment of Limes this trip. Sicily Lemons were in good supply. Los Angeles Oranges and Lemons came in freely—the demand was good, and rule steady at quotations. Dried Apples were called for, other varieties of Dried Fruits were extremely dull. Early Vegetables were more plentiful, and the prices for all are rapidly declining. We are indebted to Howe & Hall, Commission Merchants, for the following price list: Apples—Choice, \$2.00 to \$2.50 per box; common, \$1.50 to 75c. per box. Pears, \$1 to \$2 per box. Lemons—Sicily, \$8 to \$10 per box; Los Angeles, \$1.50 to \$2 per 100. Limes—Mexican, \$15 to \$25 per M.; Los Angeles, \$5 to \$6 per M. Bananas, \$3 to \$5 per bunch. Pine Apples, \$6 to \$8 per dozen. Cocoanuts, \$7 per 100. Dried Fruit—Apples, 5½c. to 7½c. per lb.; Peaches, 8c. to 9c. per lb.; Pears, 4c. to 7c. per lb.; Plums, 3c. to 4c. per lb.; pitted, 14c. to 16c. per lb.; Prunes, 14c. to 16c. per lb.; Figs, White, 6c. to 8c. per lb.; Black, 4c. to 7c. per lb.; California Raisins, \$1 to \$2 per box; halves, \$1.50 to \$2; quarters, \$1.75 to \$2.50; Dried Grapes, 3c. to 5c. per lb. Vegetables—Cabbages, ¾c. to 1¼c; Cucumbers, \$2.50 per doz.; Asparagus, 3½c. to 6c. per lb; Marrowfat Squash, \$20 to \$25 per ton; Green Peas, new crop, 15c. to 20c. per lb.; Okra, Dry, 20c. per lb. Cauli-

flower, 40c. to 75c. per doz.; Mushrooms, 8c. to 10c. per lb.

The markets generally are very slack and prices more or less nominal. The abundance of California and Oregon dried Apples, Peaches, Plums, Prunes, etc., go far toward driving out foreign supplies, and on which heretofore we were largely dependent, such, for instance, as Zante Currants, Hungarian Prunes, etc. Now we are quite independent of all these articles, and in a few years we will also have Raisins, Figs, Almonds, Walnuts, etc., of superior quality and in quantities to supply all demands west of the Rocky Mountains. Already our home supply of Oranges, Lemons, and Limes, displace vast quantities of these articles heretofore imported, and the time is drawing near when Olives will be largely produced and utilized on the Pacific Slope.

The rains are continuing rather heavy late this season, notwithstanding the quantity that has fallen. The rain fall is now up to this date (April 4th), rather upwards of 34 inches. On the 26th of March we observed some good sized Strawberries in market, of fair, but not full ripe color; the price 50cts. per basket of two-thirds of a quart, or about one dollar and a quarter per lb.

A NEW SANITARY USE FOR TREES.—A correspondent of the *American Architect* calls attention to a phenomenon which he has observed in the outflow of waste from his own house. He has a close-built brick cesspool eight feet in diameter and eight feet deep, with an overflow thence for liquids into a percolating stone cesspool ten feet by ten; both are domed over at the top, closed each with a flat stone, and covered with soil. Unlike his neighbors, whose cesspools are constructed in the same manner and in the same kind of soil, but who are

subjected to the necessity of cleaning out both cesspools at frequent intervals, his own have been in use for four years without being opened, and have given no inconvenience. A few months ago a deep excavation in the street near his percolating or overflow cesspool revealed the fact that the moisture from it was all absorbed by the roots of three large and very flourishing trees, a tulip and two maples, in its immediate neighborhood. "There could be no accumulation of water," he says, "where there were such channels to draw it up." This certainly is an important point to be considered in locating the area of absorption for household waste.

CHICORY CULTURE IN SAN JOAQUIN COUNTY.—The Stockton *Independent* of March 11th, says: The lands devoted to the growth of chicory in Sacramento county having been overflowed, the farmers who have hitherto derived considerable revenue from the cultivation of that plant will be deprived of it this season, and the deficiency will have to be supplied by the San Joaquin farmers. We learn that in anticipation of this a large area is being sown in chicory this season in the vicinity of the chicory factory than ever before. We do not know that chicory is cultivated in any other portion of the State. The seed sown is imported annually from Germany, it having been found that seed raised in California will not answer, as the plant appears to degenerate.

GRAPE SYRUP.—The manufacture of syrup from the Mission Grape is a new industry which bids fair to become remunerative to the vineyardists of California. It is said that the syrup can be readily marketed at fifty cents per gallon, and that the manufacturer can afford to pay twenty dollars per ton for

the Grapes, which will be very remunerative to the vineyardists. It appears that J. C. Weinberger, of St. Helena, Napa County, has stepped to the front in this business, and has thus far been very successful. In order to get reliable information, we wrote to Mr. Weinberger for full details. In reply he says: "I manufactured last fall upwards of 2,000 gallons of syrup which I mostly sold to San Francisco wine dealers. It is also gaining favor for family purposes. The only trouble I find is the crystallization which it will undergo; however, by heating it will return to a liquid state very readily." Mission Grapes are used in the manufacture of syrup, not only because they are cheaper than other kinds, but they are worth more for syrup—containing a greater quantity of saccharine matter.

FRUIT CULTURE IN LAKE COUNTY.—We are thoroughly satisfied that no part of the State is better adapted to the successful growth of fruits of all kinds than the county of Lake. The rich loam of the valleys is suited admirably to the growth of Prunes, Pears, Plums, Apples, and some of the small fruits, and the hill lands to the growth of nearly every other kind. This crop is one of much profit, and now that fruit driers and refrigerator cars have been found to be so successful, our market is co-extensive with the United States. Very little attention has been given to this industry in this county heretofore, but we are glad to know that many trees have been set out this season, and hope very many more will before it is too late. In Lake County there are some of the finest vine lands in the State, and we urge upon our people to pay more attention to their growth. Such lands are now cheap, and many a family who are not able to

buy a valley farm can pre-empt, or buy at a low price, a home in the hills or on the mountain sides, and in a few years make a support from a few acres in vines and fruits.—*Lake County Bee.*

A SOUTHERN CALIFORNIA ORCHARD.—A correspondent of the Los Angeles *Star* thus writes of the magnificent orchard of the Wolfskills: This enterprising family own and cultivate over one hundred and fifty acres of land, almost exclusively set in citrus fruits. They have over 2,000 bearing Orange trees, seedlings, many of which are nearly forty years old. However, the great majority are about twenty years from the seed—about 1,500 budded, of the most approved home and foreign varieties, and 2,500 Lemons, about one-half of which are budded on Orange stocks; over 3,500 bearing Limes, besides almost any variety of deciduous fruit in existence, and Apple, Plum, Peach, American and Japanese Persimmon, Cherimoyers (Custard fruit), and St. John Pear trees over fifty years old that average twenty bushels of fruit to the tree annually. They have also a variety of nuts, such as Almonds, Pecans (bearing), Walnuts, etc., with an almost endless variety of ornamental trees—four famous varieties of Cypress, flowering evergreens, Tuberoses, Magnolias, Japonicas, etc., all of which, with numerous other species, even to the modest little Violet, are elegantly arranged. We first saw our first *Ficus elastica* (India rubber plant), as well as *Pittosporum undulatum*—a flowering beauty—in Louis Wolfskill's gardens. He has about 500 Banana plants, many of which are bearing, that is, in their season, summer and autumn.

A LOAMY SOIL FOR THE GARDEN.—For most of the ordinary purposes, the soil of the garden should be a rich loam;

especially for perennials and annuals. If any plants require sand it can easily be supplied. Peat is but little used in general gardening. It is only required for rhododendrons, for azaleas, and in the culture of some of our fine native plants.

SALAD plants are very numerous; but in former times many green vegetables were eaten uncooked which are now entirely forgotten. In 1669, Evelyn gave a list of seventy-three plants so used.

HEARING RESTORED.—Great invention by one who was deaf for twenty years. Send stamp for particulars. *Jno. Garimore, Lock-box 905, Covington, Ky.*

METEOROLOGICAL RECORD.

FOR THE MONTH ENDING MARCH 31st, 1878.

(Prepared for THE HORTICULTURIST by THOS. TENNENT, Mathematical Instrument and Chronometer-maker, No. 18 Market Street.)

BAROMETER.

Mean height at 9 A. M.	30.10 in.
do 12 M.	30.09
do 3 P. M.	30.09
do 6 P. M.	30.08
Highest point on the 8th at 3 P. M.	30.3
Lowest point on the 27th at 6 P. M.	29.7

THERMOMETER.

(With north exposure and free from reflected heat.)

Mean height at 9 A. M.	57°
do 12 M.	62°
do 3 P. M.	62°
do 6 P. M.	57°
Highest point on the 19th at 12 M.	70°
Lowest point on the 4th at 9 A. M.	47°

SELF-REGISTERING THERMOMETER.

Mean height during the night.	49°
Highest point at sunrise on the 19th.	56°
Lowest point at sunrise on the 4th.	38°

WINDS.

South-east and south-west on 15 days; north-east and north-west on 2 days; west on 14 days.

WEATHER.

Clear on 4 days; cloudy on 20 days; variable on 7 days.

RAIN GAUGE.

	Inches.
3d.	0.53
6th.	0.86
7th.	0.05
10th.	0.02
15th.	1.02
17th.	0.08
20th.	0.12
21st.	0.18
24th.	0.40
25th.	0.08
26th.	0.46
27th.	0.01
29th.	0.25

Total.....4.26
Previously reported.....25.77

Total for the season.....30.03



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 - o. 3—**Green and Hot-house and Bedding Plants**, with supplemental list of **Novelties**, Free.
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- No. 4. Wholesale, Free.
- No. 5. List of New Roses, Free.

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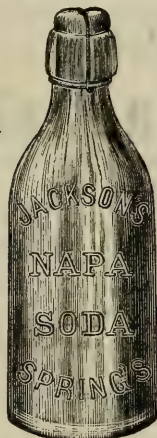
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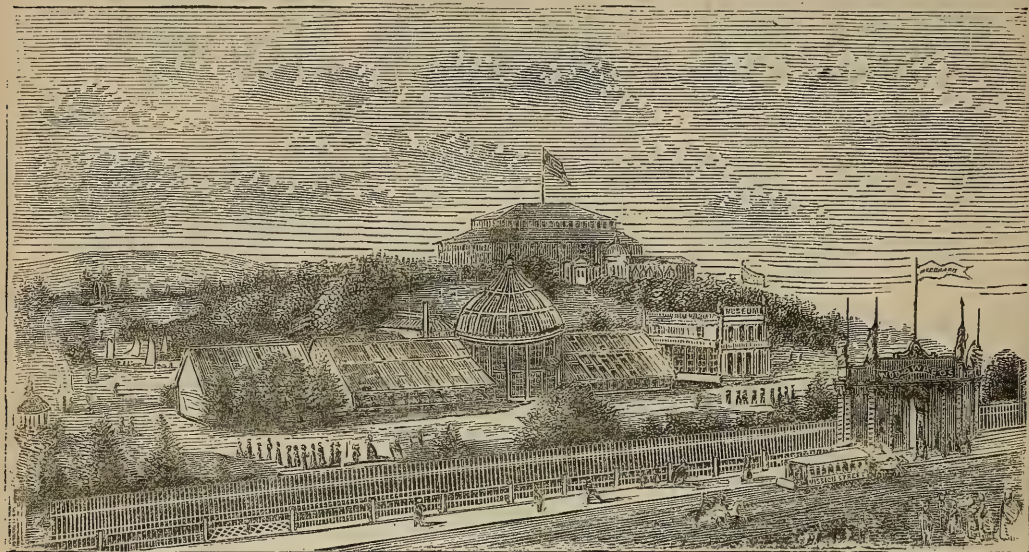
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E. J. HOOPER, Editor.

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LARGE EARLY APRICOT.

THE

California Horticulturist

AND FLORAL MAGAZINE.

VOL. VIII.

SAN FRANCISCO, MAY, 1878.

No. 5.

CONCERNING OUR HORTICULTURAL FUTURE.

BY CHARLES H. SHINN.

If an intelligent savage were to be taken through one of our large cities, from one point to another of interest, he would find few things so utterly incomprehensible as a large commercial nursery. He would soon understand that houses were for shelter, that railroads were for travel, that even our complex and ridiculous modes of dress were partly for comfort; but of the reason of growing thousands of plants of no value for food, for clothing, or for fuel, he would fail to conceive. It might, indeed, be possible that the sudden sight of a radiant Azalea Van Houtti in full bloom, or of a snowy Espiritu Santo blossom with its wonderful hidden bird, might move him to realize, by a sudden thrill of nature, that the love of these things showed greater advancement than did the miles of marble palaces. But if ever our savage grew to appreciate beauty of form, of fragrance, of growth, of singularity, of simplicity, of color, all of which abide more or less in each royal

flower, he would be far advanced toward the gift of civilization.

Indeed, I know of nothing else, unless it be the newspaper, which has been so much the creation of the past fifty years, as this wonderful horticultural development. Formerly ambassadors, from countries whose doors were locked against merchants, took gifts of their native plants and laid them before proud and selfish kings, who planted them in royal gardens where only nobles and courtiers might wander. The time came when these pleasure gardens became popular resorts; the love of flowers extended from the palace to the cottage; men drew nearer to the heart of nature, and that ever faithful breast revived them.

It is the peculiar glory of our age that a man's home is safer than ever before; loving it more he beautifies it more, and that beauty reacts upon his mind. Thus the tendency of every age of peace is toward a fuller development of Horticulture, which is, of all arts, endless in its hopes, and swift in its progress. Where, half a century ago, there were but a few botanists exploring the new floras of China, South America, Mexico, there are now educated

men in every region of the earth whose lives are devoted to the discovery and dissemination of new plants; there are even nurseries who send out collectors, for the commercial value of a new plant is considerable. The rarer orchids of the tropics, the tuberous rooted begonias, the lilies and foliage plants of Japan—these, and many others, have paid their discoverers and propagators largely.

This process of discovery is to continue until every plant is found, classified, tested, and made use of, if possible, for food, shelter, timber, ornament, or medicine. Nor is this a light task. Even in our own State the steady labor of local and Eastern botanists has by no means exhausted the field, and we may look for many more discoveries. When we consider the vastness of the new field of Central Africa, where unrecorded families may exist, and add the slightly explored regions of Asia and South America, we shall begin to appreciate the task.

Next will come the commercial labor of scattering these gems over all the land. If the demand is only awakened, our rarest and costliest plants, as the Camellias, Rhododendrons, etc., will in time be brought within the reach of every purse; a new flower, found at the antipodes, will the next season flash in thousands of gardens. The whole press of the land, secular and religious, is fostering precisely this state of affairs, by constant horticultural items which show how general an interest is felt in such topics.

We aim to make America what England has become by her steady peaceful years of planting, and the arts of civilization; we will have no servile imitation of her yew groves and hawthorn hedges, but we will use our native trees and plants, and those foreigners, only,

which are adapted to our climate. New England shall be New England still—land of trailing Arbutus and Lilacs; the opulent Middle States, the wide West, the sunny South, our own golden slopes—each and all shall be individual, and therefore artistic. It is the refinement which comes from a national love of flowers, the simplicity which is fostered in rural homes, the comfort and quietness of horticultural pursuits that restless America needs most of all regions under the sun. Art, science, and literature shall build up a strong, patient and benign land if they are only founded on the friendly earth, and on the pursuits which are of the soil.

The poet's Golden Age is lost in the mists of fable; but the song of songs lies before us. California has deserts to plant with palm, and mountains to plant with cypress and pine. There are swamps to be reclaimed with Blue Gums, and red lands to be covered with orchards and vineyards, and homes to be embowered in Magnolias and Roses. Tea experiments, coffee trials, Persimmon investments, and similar investments and similar efforts, are to go on, until each locality knows its best crop. Wheat-culture will in a measure pass to newer States and virgin soil, and the sceptre of grain will leave our hands to be disputed by that of flowers and fruits, and Horticulture in all its highest developments. To this future, then, we look; and Southern Europe is in many things our type. Whatever Greece, Italy, and Spain were in their noblest days, that we hope to become, except that as our facilities are greater, so our mingling of the beauties of a world will be more complete. Our State is not a tent of the Saxon race, pitched hastily by this western ocean, but a temple rising in the sight of all men. And there shall be the great of

after days worship, when, ages hence, the story we are beginning shall be written in the deeds of our children.

INSECTS INJURIOUS TO HOUSE PLANTS.

BY F. A. MILLER, OF THE EXOTIC GARDENS.

[CONTINUED.]

While, no doubt, fumigating with tobacco smoke is the most convenient and most effectual remedy for the green fly, the wooly louse, and other aphides, which are so detrimental to the young shoots and leaves of plants, there are instances where fumigation cannot be resorted to, as for instance in the open air, or where plants occupy a window of the parlor or dining-room; in either of these cases a sprinkling with a solution of Persian insecticide with water, to which may be added a small quantity of spirits, will be very effectual. Two ozs of Persian insecticide dissolved in one-fourth of a pint of spirits and diluted in ten gallons of water, is fully strong enough to answer the purpose; two or three applications at intervals of two or three days will, generally, destroy the insects. If the true Persian insecticide cannot be readily obtained, the Gishurst Compound of English manufacture will answer the purpose. I have been using the latter to great advantage for some time. The solution should be used quite warm, and the remedy consists in the application of Persian insect powder in a dry state, dusting the leaves and stems with it. This should be done in the evening, after sprinkling the plants with clear water, so that the powder may stick better to the foliage. Some have used tobacco dust in the same way with very good effect, but the former is a more certain cure.

The scale or shield louse is another very annoying pest. While young they move about, when older they fix them-

selves permanently upon the underside of leaves or stems, and by a secretion from the body a scale is produced, under the cover of which the insect lives, lays its eggs, and multiplies. These scales are found more particularly upon Olianders, Azaleas, Camellias, Pine Apples, Roses, Cactus, Palms, and other shrubs, under glass as well as in the open air. The most effectual remedy is to wash and sprinkle the plant with a solution of Persian insecticide or Gishurst Compound, as recommended before. A wash with this solution is the most certain remedy, but if a sprinkling is more desirable, it should be repeated every two or three days until the scale has entirely disappeared.

The red spider is a most aggravating insect, and is very injurious to hard-wooded greenhouse plants, such as Camellias and Azaleas, also to Fuchsias, if exposed to a dry and very warm atmosphere. The insect itself is scarcely visible to the naked eye, and is of a brownish color. A dry atmosphere favors their spreading wonderfully; it is very important therefore to keep up a moist atmosphere, to syringe freely, and care should be taken to apply the syringe more particularly to the underside of the foliage. Three-fourths of the Azaleas imported to this coast have been made the victims of the red spider. The best remedy is to dip the plant in a solution of Gishurst Compound, and syringe frequently, particularly during dry and hot weather, with clear water. A humid atmosphere and keeping the roots of the plant well supplied with water, will do much to prevent the red spider from gaining a foothold.

Another very dangerous insect, and one which is not readily recognized by the naked eye, is the Thrips, of a blackish color, with rings of a dirty white color. They are found upon the under-

side of the leaves, from which they extract the juice. The female after laying her eggs dies, and becomes covered with a white wooly substance as a protection to her eggs; fumigating with tobacco smoke and frequent syringing with a weak solution of Persian insecticide or Gishurst Compound will destroy them.

Less dangerous insects are worms which penetrate and infect the soil of pot plants. Their presence has a very bad effect upon the soil, which it sours, and they should be exterminated as soon as discovered. Setting the pot half way in hot water, say of 122 to 123 degrees Fahrenheit will send them to the surface when they can readily be removed.

It can readily be seen that the remedies for destroying insects are simple and easily applied, but we should never lose sight of the importance to provide the proper conditions of atmosphere, temperature, ventilation, etc. A sweet humid atmosphere is best suited for most plants while they are in a growing condition, a dry and cool atmosphere is preferable for plants in a dormant state. Of course there are exceptions to this proposition, but they are few and not essential to an amateur.

THE CANNA.

BY W. C. L. DREW.

During the last few years much attention has been given to the cultivation of those plants esteemed principally for the beauty of their foliage.

Of this class of plants the Canna is one of the best, and for producing a tropical effect there is nothing better. It already is cultivated to a considerable extent, and doubtless it would be much more extensively cultivated if it were not erroneously supposed to be very difficult to propagate from seed, and

were the roots less expensive, they costing at present from thirty to seventy-five cents each.

There is no more difficulty in growing Cannas from seed than in raising corn, which the young shoots on their first appearance very much resemble.

The seed before being planted should be soaked for twenty-four hours in very warm water, it should then be planted in boxes filled with a very light loamy soil, and placed in some situation where it will receive bottom heat. In from one week to ten days every seed will have pushed up a sturdy green head, and will grow rapidly.

Boxes are preferable to pots for propagating either by seed or roots, as they do not dry out so rapidly, and consequently do not require watering so frequently.

If the seed are started early enough in the season, or forwarded in a hotbed, they will bloom the first season. The flowers, though generally of very brilliant and showy colors, are small and not very attractive.

The Canna makes a grand display planted in groups of a dozen or more on the lawn; it is also very effective when used as a single specimen plant for decorating halls and for temporary designs; they also produce a fine effect when grouped in contrast with other plants of similar habit.

There are several varieties, the leaves of some being entirely green, while in some the leaf-stem, midribs, and veins are of various colors.

A variety with striped foliage bearing the formidable appellation of *Waesze-wiczii* and a yellow variety called *Nepalensis* are both desirable. A new introduction known as *Canna Tricolor*, of which the stems and margins of the leaves are tinted red, with the rest of the leaf thickly streaked and mottled

with creamy white, should be in every collection. Another new introduction, *C. oriflamme*, of which the foliage is variegated violet and bearing showy salmon flowers, is also very desirable. Besides these there are some seventy-five named varieties, all more or less beautiful.

In winter the foliage dies to the ground; in California it is not necessary to remove the root, from which new shoots will come.

SEEDS OF TROPICAL PLANTS.

BY FLORIST.

The most successful mode of raising tropical plants from seeds is by a pit filled with tan or leaves, and the heat kept up by the application of linings.

Few tropical plants ripen their seeds in our stoves; our supply, therefore, depends mostly upon importations from the various countries of which they are natives; but as these seeds may arrive in the fall, or during winter, it is generally better to sow them nearly as soon as they are received, because they may have been long gathered, and they are also liable to be very much injured by their transition from warm to cool latitudes; indeed, some sorts have been found to be incapable of the change.

After much experience it has been found that seeds packed loosely in coarse canvas bags, and hung to the ceiling of the cabin of a ship, where they are exposed to light and air, and protected from damp, will retain their vegetative powers much better than when enveloped in wax or tallow, or mixed with sugar or charcoal. No material will preserve seeds so long as coarse brown paper, made from old tarred rope, in which a large quantity of tar is incorporated. Cartridge paper affords seeds no protection whatever.

Surrounding seeds with moist earth rammed very hard will also prevent germination, and at the same time retain the vital principle. In general, the most difficult seeds to preserve are those which contain much oil; but there are many exceptions in the case of the seeds of the *Brassica* family, mustard, and other cruciferous plants.

As the temperature of the pit before named must be kept from 66 to 70 degrees and upward, it matters not, so far as heat is concerned, at what season the seed be sown. It is the want of sun-heat and light that operates against them while just coming into a state of vegetation, for want of which they are very apt to damp or die off just as they get above the ground. Seeds that arrive here from September to December may be sown in our mild climate, particularly such as are of large size, or hard-shelled, and which require to lie a long time in the ground before germination takes place. It is, at any rate, desirable that these last especially should be sown as soon as they are received at that time.

The soil in which tropical seeds soonest vegetate, is that called vegetable mould of decayed leaves or sod, and a small portion of light, sandy loam. They should be sown in pots of the size called thirty-twos, and these must be well drained, the surface of the mould in them made very smooth and firm, upon which the smallest seeds are to be sown, and covered to about the depth of the diameter of their respective sizes. When sown, the pots should be plunged to the brim in the bed of the pit, providing the heat be not too strong, in which case it will be well to half plunge them first, and afterward to their full depth. A slight watering should be given them when sown, but this will not be often neces-

sary, particularly during the coolest season, as the steam arising from the bed and linings will be abundant, and by condensing upon the under surface of the glass will fall back on the mould in the shape of dew. Their whole treatment during the coldest part of the year is to regulate the temperature by renewing the linings, for the bed need not be disturbed till warmer weather, and to guard against an extra degree of damp and impurity of air from want of sufficient ventilation.

Seeds as they arrive are to be sown in the same manner. In the latter part of spring, when the weather becomes still milder than the early portion of it, a regulation of the seed-bed may take place by removing the seed-pots into another pit or hot-house for a day or two to allow of the bed being turned, and fresh tan or leaves added; and when that is completed, the pots in which the seedlings are not yet advanced to a state fit for transplanting should be carefully taken out and placed in small pots of the size of small or large sixties, as the case may be. These should be again plunged into the bed, either in the division set apart for seed-pots, or in that in which cuttings are placed. Here they should remain till they have taken with the mould, and can stand the sun without shading. It is necessary that this kind of pit be divided into two or three compartments; one, for example, for seed-pots, one for cuttings, and one for the young plants, whether from seeds or cuttings, when they are potted off. This is necessary, because the latter require to have more air admitted to them as well as light. There is no difficulty in dividing such a pit at pleasure, because having a boarded partition made to shift from one place to another is all that is required. Thus

one or two lights may be inclosed for one purpose, and one or more for another.

Many thick and hard-skinned seeds do not vegetate freely; in such cases it is necessary to steep them in moderately warm water for a few days before they are sown, and to keep them at the same time in a warm situation.

A MURDEROUS PLANT—*DARLINGTONIA CALIFORNICA*.

BY J. G. LEMMON.

No plant indigenous to the Pacific Coast is more profoundly interesting than our *Darlingtonia Californica*. The eye of the uncultured tourist or listless stock-man, no less than the studious naturalist, is at once fascinated when first its secret haunt is invaded in the fastnesses of the Sierra Nevada. A startling mass of green, yellow, and crimson snake-heads, high raised in air and thrusting enormous, flaming, forked, curling tongues in every direction; a developed warning principle in the passive vegetable kingdom; a table-turner upon an old eternity-endured enemy; a coming plotter against an alert foe; an ingenious deluder of the unwary; a cruel murderer of the alarmed; an insatiate vengeance-taker; a bold, watchful, cold-blooded, confederated assassin — the *Darlingtonia* forms a frightful spectre of the shadowy swamp, a horrid incubus of subsequent dreams! "Abhorred shape! That only grace of beauty takes,

And brilliant hues to compass evil."

The paraphernalia which the *Darlingtonia* employs for attracting its victims is that of the saloon-keeper and the Cyprian's gaudy colors, ravishing odors, delicious sweets, and delightful apartments. Its machinery for destroying them is that of the highwayman and

the arch fiend, deceitful traps, tripping obstacles for the feet, smooth declined planes, pointed dagger-thrusts from behind, and silent wells of oblivious waters. What of enchantment and bewilderment is not furnished by the many-colored, revolute, honey-coated mustache, inviting to the spacious, vaulted, sugar-lined, many-windowed hood of the large, tall leaves each robust plant provides extra by sending up a long slender, shining flagstaff and suspending a flaunting array of green, gold and crimson bunting, loosely enfolding nectaries of scented sweets, the curious flower of the *Darlingtonia*. Surely no member of the vegetable kingdom has so remarkable and unmistakable a mission, none steps so far out of its normal state to perform it, and none executes its trust with more ingenuity and success.

How the *Darlingtonia* is constructed and the mode and results of its warfare have been made the subject of searching expeditions and elaborate essays by Darwin, Hooker, Gray, Canby, and recently by a fellow member of this academy, Henry Edwards. But I trust that an enthusiastic botanist, whose facilities for observation have been most fortunate, may be pardoned for presenting a few facts, gained, not without many different interviews, of this notorious rogue at various seasons of the year.

Living less than 60 miles from one of the few localities where the *Darlingtonia* is found in its best estate—Butterfly Valley, near Quincy—I make yearly pilgrimages to its home, I camp by its battle-ground, I conquer my repugnance to its hideous aspect and its cruel work, become accustomed in time to the stench of its rotting victims, and I carefully study its wondrous mechanism. I note its aspects and appliances varying with the seasons. I feed it with other food—flesh, fish, fowl, and

farinaceous diet, sugar, vinegar, salt, pepper, oils, saleratus, acids, etc. I witness the welcome of agreeable diet, the sickening effect of poisons. I ply it with unusual captives—frogs, snakes, minnows, tadpoles—and note the arrival of new forces or the adaptation of combined powers to meet the new conditions. I recognize the tenacity of purpose, the almost intelligent use of means, and reverently I humble my spirit before the revelation of infinite wisdom and power.

I have reported these observations so often and fully, that every year brings increasing inquiries from thinkers in distant lands, asking to have this power or that mystery cleared up; or to know if this or that phenomenon is connected with the history of the famous plant. One of the closest questioners is W. M. Canby, of Wilmington, Del. The facts elicited formed the theme of a most exhaustive essay, that was read before the American Academy of Sciences and reprinted in most of the languages of Europe. "Why are the leaves twisted one-half way round?" was Canby's last demand. It will be the especial object of this essay to answer this question.

To discuss this subject thoroughly and with the expectation of arriving at the truth, we must begin where the zoologist does with his puzzles—with embryology, the infant state. The seed of the *Darlingtonia* is a brownish, hairy, Indian-club shaped object, about three lines long. It would be a bur, but for the flaccid, hollow, barbless hairs. Thrown out in hundreds by the large, bursting pericarps, they fall upon the running water or mossy carpeting of the bog. A seed here and there is caught by its hair in favorable conditions and sends down a tiny radicle in search of a foundation, whereon to erect a unique charnel-house of many

tall, feeding funnels. The precursor of the prospective phalanx of rapacious, cylindrical stomachs, is a very innocent looking little affair.

The plumule first develops a thin, flat, falcate, green leaf, about half an inch long. Soon it becomes reddened, tubular, and veiny, while a relatively large opening appears at about two-thirds of its length, beyond which extends, curving inward, the slender, dorsally flattened, crimson, naked midrib, representing the true leaf, of which the tube below is the petiole. Along the inner face of the petiole, a broad wing extends from the lower edge of the inclined orifice, down straight to the collum of the root, where it divides and clasps the stock.

This primary leaf is constructed similarly to those of the related *Sarracenia*, except that in the latter genus the true leaf or lamina is short, broad, and is bilobed, or many-lobed, and forming a border nearly around the mouth of the pitcher-like petiole. During the first season four of these simple *Sarracenia*-like leaves appear of equal size generally, apparently in a whorl, but inspection reveals their alternate arrangement. All face inward, or rather upward, as the leaves first push out horizontally, then ascend upward. The uncovered opening is favorably presented for the reception of moisture, insects, or any objects obeying the law of gravitation. Also, the mouth parts and interior of the tube are armed with strong hairs, pointing inward, while inspection of the contents reveal minute insects (generally of the *Ichneumonidae* and *Tinnice* families), entrapped, drowned in water and being digested by these tiny rogues, thus early playing their little game.

During the second year the creeping, rhizomatic character of the plant is manifested; also, it increases rapidly in

size. The whorl of leaves now produced, from one-half an inch to several inches beyond the first whorl, are long and large, two to three inches long by half an inch wide, the whole striated with longitudinal veins, and colored with yellow and crimson. Often, too, the other kind of leaves make their appearance, forming one or more of the first members of the whorl. So very different are they at the very beginning, that it seems impossible that both forms should be found on the same plant. They may be larger or smaller than the infantile form (often but half an inch long), but still they will be perfect types of the true *Darlingtonia* leaf—the twisted petiole, the swelling, light, admitting hood, the small, round aperture facing downward, the enormous, depending, curling, flaming, and, in the season, honey-smears two-parted lamina or true leaf.

The fourth year's leaves and all subsequent are all of the vaulted, big-mustached form—the plant is of age, is mature; but occasionally on offsets and runners from weak plants at any age, the infant form of leaf is found, but no graded, transitional stages have yet been detected, though much research has been applied in this particular direction, as bearing upon the popular theory of evolution. The linear, strict petiole, with upturned mouth and long, naked, midrib, always accompanies the infant form, while the adult leaf is never deficient in the least characteristic feature of its wondrous organism.

I should have noted before the manner of vernalion or budding. In the bud, the petioles of both kinds of leaves first take form and extension. The midrib of the infant is but a minute, subulate spur; the future mustache of the adult form is a pair of involuted, close-rolled, awl-shaped horns, not unlike those

waxen pilose appendages which the incipient dandy sometimes displays beneath his nose.

Not at all times of the season is a prominent characteristic observable. For several years I did not detect one of the most distinctive features of this insect trap, the saccharine secretion. This phenomenon was not certainly known for several years after the discovery of the plant. On the 4th of July, '75, in company with Mrs. Austin and family, I went to celebrate the nation's holiday beside our Californian curiosity, located in a large oval bog in the centre of a grove of alders. Much to our surprise, the tall, crowded cobraheads, upreared among snowy *parnasias*, azure *erigerons*, yellow *nartheciums*, and purple asters appeared, dripping with glistening drops of honey. The catching operation was in full progress.

This saccharine fluid, of the consistency of honey, is secreted by glands of the hood, both without and within, standing in beads along the margins of the expanded cells, the translucent windows of the balloon-like hood. It is often so abundant as to unite and flow down, that on the inside into the forward, depressed part of the hood, that on the outside smearing the mustaches completely, in addition to a similar secretion of the latter. Not only was the curling, crimson streaked mustache smeared throughout, but the border of the wing in its spiral curve half-round down to the root was gemmed with a line of honey globules. These globules in the oldest leaves were crystallized into sugar-plums, forming a not-to-be resisted decoy to the groundling below.

So of the watery fluid found in the lower portion of the petioles at times. Only at a certain season—just at the opening of the months above—may these phenomena be detected. The main

veins on the inside of the tubes may then be seen gemmed from top to bottom with beads of a water-like secretion, which finally becomes so abundant as to flow down and form the wells of death. When the trap is favorably placed, or the quantity of insects is unusually large so that the gourmand gets his stomach full, or when fed by hand to the top, slowly, with flesh food, the fluid is secreted as demanded by the necessities of the case, and soon fills the tube to overflowing. Late in the season the water is evaporated and only the skeletons, wings, legs, etc., of insects remain—the bones of the carnal feast.

Again the arrangement and different altitudes of the leaves are not at once observed—and cannot be made out clearly from the usual crowded specimens supplied to the herbariums of the world. Only young, vigorous, solitary plants display the typical plan of growth—a plan conformed to the wants, or rather, the wicked designs of the *Darlingtonia*; and here we are brought round to the solution of the question under particular description—why the twisting leaves?

First as to the fact. The leaves of mature rhizomes—the true *Darlingtonia* leaves—are each twisted one half way round whatever the length, whether one half inch, or over three feet. All the leaves on one plant turn one way, but exactly half (according to repeated counts by Mrs. Austin and myself), have leaves turning one way and half the other. The four leaves of the season rise successively to different elevations, the last in time, to the highest place. Each turns half round and holds out its flaunting lures into space in a direction radiating from the centre or axis of the plant. The reason for this twisting of the petiole must be to further the design—the malicious animus

of the whole plant's history—to favor the catching of insects coming from all quarters.

The less crafty-related *Sarracenia* and the infant *Darlingtonia* leaf depend on gravitation mainly, for their food, and their mouths bordered indeed with retrorse hairs open upward. The full-grown, full-armed *Darlingtonia*, with its added attractions of gay colors, fragrant odors and delicious sweets, best compasses the wholesale capture of insects necessary to satiate its rapacity, by decoying them into a brilliantly lighted chamber, over the ceiling of which are spread a net-work of honeyed path-ways, bordered, however, and ultimately shut out by hedges of short, stiff hairs that topple the victim from his footing. A high rim prevents return by the aperture. A long portion of the inner side of the tube, commencing just on a level with the edge of the orifice, is smooth as glass, so vainly the poor victim stretches his legs for rescuing aids to stay his descent. About half way down long, stiff, declined hairs begin to be met with, which give way easily from above but close up behind, and with multiplied numbers, as the struggling victim nears the goal, pushes him down to the rising flood, and crowds him beneath the silent, foetid, decomposing waters of oblivion.

Now, why the peculiar characteristics of the *Darlingtonia*? Why would not less elaborate machinery answer as well? Let us see: A tube so capacious as to hold a half pint of insects, the usual meal it seems of the *Darlingtonia*, must be very wide or very long. If wide, there would be great expenditure of the saccharine secretion, since it must surround the mouth and smear all the approaches—an expenditure not to be incurred by our economical plant. If long and prostrate, it would be inter-

fered with by other plants, also would be in danger of visitation and robbery by insect-loving animals. If upright and with mouth upturned, it would be above the usual range of insects, while its digesting fluid would be weakened by the reception of rain and dew; but, most of all, other plants are created and set to work on this principle: The wonderful climate and soil of California must be expected to produce a finished insectivorous plant, with all possible improvements; hence, the matchless *Darlingtonia*, with its high reared, inflated heads, downward opening mouths, sugar plum winding roads to lead foot travelers up; ingeniously, brilliant and honey-coated decoys to attract flyers; and the enormous mustaches obviously turned outward by twisted petioles to catch the eye of distant voyagers in every direction; no feature of all the host is either accidental, useless, or uninteresting.

MANAGEMENT OF CUTTINGS.

BY FLORIST.

Cuttings of stove plants may be planted at almost any season, but of course the dark months of winter are the least favorable, and the spring and early summer months the most so, as the plants are at those periods best furnished with young wood, which, as we have already stated, roots much more freely than old. On the purity of the soil depends in a great measure the success of many of the tenderer kinds of cuttings, particularly those which are obliged to be kept in a moist heat, as the soil is when contaminated with other compost, very liable in those situations to cause damp and rotteness by the particles of putrefying matter generally contained in mixed earths, and the properties of which are put in

motion by the application of heat. As an exception to this rule may be adduced sand, which is of very great utility to mix with the loam, should it happen to be rather stiff for the nature of the cutting; but then the sand proper for this use is of so pure a nature in itself, that it is evident it cannot have the effect noticed above.

Cuttings should be planted as soon after they are taken as possible, and when planted receive a gentle watering, both to refresh them, and to form the sand or mould more closely round them for the exclusion of air. When they have remained for a short time to allow the leaves to become pretty dry, the bell-glasses should be put over those that require such a covering, and pressed pretty tight into the mould in the pot to exclude the atmospheric air, and prevent it from exhaling the juices of the plants, which is the use of such glasses. The cutting being so circumstanced, all its powers are forced downward to produce roots, and these will soon prove their existence by producing young leaves and branches.

In small collections, where few cuttings of any individual plants are required to be propagated, some discretion ought to be observed in selecting such as most nearly agree in habits to be placed in the same pot; for if this be not attended to, a difficulty will arise in potting them off, as some kinds will root so much sooner than others, and the process of removing them may be attended with some chance of injury to the others.

The pots should be prepared by being well drained and filled with the mould most congenial to the genus or species, to within a distance of the top about equal to or rather more than the length the cutting is to be inserted. This upper strata is to be filled with

clean sand, and when well watered and pressed tightly down the cuttings are to be planted. This operation requires care, and the dibble or planting-stick should not be sharp-pointed, for if such a one be used, the cuttings which may be of greater diameter than the point of the stick would not rest upon its bottom, but would be suspended, as it were, by the middle by the pressure of the sides of the hole against it, while it is necessary to insure success that the cutting rest upon its base on the bottom of the hole made for it. When the cuttings are planted in the pot, they should then be, for the most part, covered with a bell-glass pressed slightly into the sand, so as to exclude the air. They should then be removed to the pit above described, and either set on the surface of the bed, or plunged into it, as the temperature may be. Many plants strike best when placed in the pit without bell-glasses over them, but of this it would be impossible to form any estimate without enumerating them by name. It may be taken for granted that most soft wooded, free-growing plants will root by this means, while only the hard-wooded and smaller-leaved plants require covering.

Regularity in watering, shading, and wiping the inside, not only of the bell-glasses, but also the lights of the pit, must be attended to, and also that no excess of steam enter the pit from the linings; but against this our pit has some provision. If the cuttings be left too dry, the bark shrivels up, and the foliage drops off, for it should be remembered that tropical plants, with very few exceptions, prefer a humid, mild heat to strike in, and are much less injured by damp than plants of any other description. The most convenient shading for them is large sheets of coarse packing paper laid over the

glasses within the frame, which is both easier done and more certain of remaining without being displaced than any covering applied on the exterior of the pit, which is liable to be blown off, and before such a disaster can be discovered the whole stock of cuttings may be destroyed by the sun.

One great advantage which shading with paper within the frame has over any kind of shading laid over the exterior is, that while the cuttings are effectually shaded by the paper, the sun's rays are not prevented from entering into the pit to dry up damp and prevent an impure atmosphere from being formed, which would be the case if covered with mats, as is too often erroneously practiced.

(To be Continued.)

VALUE OF WHITE FLOWERS.

BY W. C. L. DREW.

As a rule, the value of white flowers is overlooked, and their culture consequently diminished. They are not generally considered as showy as their red, blue, yellow or purple companions, and among amateurs it is only by chance they are cultivated at all.

In our opinion they are as a class quite as important, if not more so, than those of any other color. What better emblem of purity is there than a pure, white delicate bloom? With the orange blossom we deck the brow of the bride; but when it is our sad duty to deck the form of the loved one who has departed this life, who would think of using any other than pure white flowers.

But white flowers are also valuable for bedding in masses, and no one who has never seen a bed of white flowers in bloom, would believe what a conspicuous object it is.

A bed of White Candytuft, sown in the

fall, dazzles the eye when in full bloom. For constancy, however, the Petunia, Phlox Drummondii, and Verbena, of all of which there are white flowers, are most valuable.

We all like to see and admire flowers in the evening and night as well as in daytime, and those of a white color are the only ones that serve for this purpose.

In planting your beds use a liberal quantity of white flowering plants, and you will be more than pleased.

FRUIT NOTES.

BY JAMES SHINN, NILES, CAL.

I shall at present confine myself to that portion of the State with which I am most familiar—the counties of Alameda and Santa Clara, embracing the great valley which extends from San Pablo on the north, to Gilroy on the south. This district, embracing over one thousand square miles, is one of the most important fruit sections of the State. All fruits of the temperate climes are grown in perfection, and many of the so-called semi-tropical.

The climate is varied and much modified by the ocean winds, which are chiefly felt in the northern portion, lying near the bay of San Francisco. The southern portion is warmer and drier, hence produces earlier fruit. It may be safely said that the whole district under cultivation produces in great perfection apples, pears, peaches, plums, cherries, the leading nuts, etc.

Very large quantities of small fruits are grown. The vicinity of the San Lorenzo Creek has proved the best soil for currants, the Cherry being the leading variety, as the Red Duke does not succeed. San Jose, Santa Clara and vicinity supply most of the strawberries used in San Francisco and the interior towns

The British Queen, an old favorite, has been discarded, and now Peabody's Seedling takes the lead. The new Monarch of the West is coming into favor. Blackberries, raspberries and gooseberries grow well everywhere. The foreign varieties of grape do extremely well in the foothills of this entire region, and over much of the valley, but are disposed to mildew near the bay. This can be prevented by using a trellis to keep the vines off the ground. The favorite kinds are Black Hamburg, Malvoisie, Rose de Peru, Flame Tokay, Muscat of Alexandria, Chasselas, and others.

Figs, pomegranates, olives, lemons, limes and oranges have been grown, of excellent quality, and it is not unreasonable to expect large orchards at no very distant day. In some sheltered places we have even fruited the banana; but this is a rare event.

The apple is exclusively grown in this entire section, and in great variety. The size attained by many varieties is larger, perhaps, than in any other part of the State; but apples grown with us are somewhat lacking in that sprightly acid which characterizes the same varieties when grown in the more mountainous regions. They are also lacking in keeping qualities. With few exceptions, the winter apples of the east ripen in the fall or early winter. The following apples have succeeded best with us: Early Harvest, Red Astrican, Summer Queen, American Summer Pearmain, Gravenstein, Fall Pippin, Holland Pippin, Washington Strawberry, Maiden Blush, Smith Cider, Yellow Belleflower, Rhode Island Greening, Cayuga Red-streak or Twenty Ounce, Jonathan, Vandevere, Wagener, Canada Reinette, White Winter Pearmain, Nickjack, Ben Davis, Skinner's Seedling, Large Striped Pearmain, Yellow Newtown Pippin.

The last is our best keeper, and most reliable market apple.

Pears have been grown for nearly a century at the old Spanish Missions, and both soil and climate have proved congenial in the highest degree. Large quantities are grown for the home markets and also for export. Almost all the varieties known have been experimented with; but the tendency among large growers is now to plant only a few kinds, selecting those best adapted to transportation to a distant market. The following have been most profitable: Bartlett, Clapp's Favorite, Flemish Beauty, Seckel, Beurre, Winter Nelis. Only second in importance are the Nirgalieu, Madeline, Bloodgood, Beurre Hardy, Vicar of Winkfield, Duchess d'Angouleme and Glout Moreau.

The peach is grown largely in all this district south of San Leandro. This delicious fruit does not ripen so early in this region as in the warmer interior valleys; hence, the attention of orchardists is directed mainly to the medium and the late peaches, in which we excel. For the local demand, however, all varieties are grown. Our most popular kinds are: Alexander's Early, Briggs' May, Tillotson, Strawberry, Large Early York, Shinn's Rareripe, Crawford's Early, Crawford's Late, Orange Free, Morris White, President, Salway and Smock's Late. The Thurber, Susquehanna, Foster, Silver Medal, Nanticoke and many others are yet on trial. The Early Beatrice is not a success.

The cherry, also, does admirably with us if it is trained low so that the branches protect the trunk. The leading varieties are: Knight's Early, Early Purple Guigne, Elton, Black Tartarian, Gov. Wood, Napoleon, Bigarreau, Mayduke, English Morello. The cherry is

preferred on Mazzard stock, but bears well on the Mahaleb.

The plum, prune and apricot are staple crops, entirely free from insect ravages, and peculiarly adapted to our soil and climate. They market well while fresh, and are dried with ease. Our best plums are the Washington, Columbia, Peach Plum, Quackenboss, Duane's Purple, Coe's Golden Drop and Imperatrice. Of prunes, the Early Felenberg, German, Hungarian and Petite Prune d'Agen. The most popular apricots are the Early Golden, Royal, Moorpark and Hemkirke.

The almond and English walnut are grown in every part of the valley, with promise of entire success. Many orchards of almonds have been planted, and some have paid largely. The almond does best in a place somewhat sheltered from the north wind. A line of *Eucalyptus globulus* is usually sufficient protection.

There are few difficulties in the way of the fruit-grower of this section. No destructive insects have troubled us, and we are near the leading markets of the State. In dry seasons, the increased price of fruits compensates for the short crops. In some respects the home market is overdone, and we must make an outlet by exporting more fruit, either fresh, canned or dried. Much interest has been shown in various methods of drying, but the present tendency is toward cheap family driers, which will utilize the waste in small orchards, and enable each orchardist to prepare his own fruit.

The region whose leading varieties of fruit I have briefly described, constitutes one of the most desirable portions of California for the orchardist. The business of raising fruit is rapidly extending, and many farmers are abandoning the growth of cereals and plant-

ing orchards, and are beautifying their places. The awakening of public interest on this topic has been wonderful, and it is hardly too much to say that probably in a few years this entire valley will be occupied by orchards, vineyards, small fruit and market gardens.—*The Gardener's Monthly*.

WHERE FLOWERS CAME FROM.—Some of our flowers came from lands of perpetual summer, some from countries all ice and snow, some from islands in the ocean. Three of our sweetest exotics came originally from Peru; the camellia was carried to England in 1739, and a few years afterward the heliotrope and mignonette. Several others came from the Cape of Good Hope; a very large calla was found in ditches there, and some of the most brilliant geraniums, or pelargoniums, which are a spurious geranium. The verbenas grow wild in Brazil; the marigold is an African flower, and the great number from China and Japan. The little daphne was carried to England by Captain Ross, from almost the farthest land he visited towards the North Pole. Some of these are quite changed in form of cultivation; others have only become larger and brighter; while others despite of all the care of florists and the shelter of hot houses, fall far short of the beauty and fragrance of the tropics.

Among improved ones is the dahlia. When brought to Europe it was a very simple blossom, a single circle of dark petals surrounding a mass of yellow ones. Others, with scarlet and orange petals, were soon after transplanted from Mexico, but still remained simple flowers. Long years of cultivation in rich soil, with other arts of skillful florists, have changed it to what it now is—a round ball of beauty.—*Riverside Magazine*.



Rod and Gun.

TROUT FISHING AND TROUT SPECIES.

The season has come round again for this, to true anglers, seductive sport. The copious and long continuous rains this winter have supplied abundance of water in the rivers and creeks, which will last for some time into the summer. The fish could go up a long distance into the country to fulfill the laws of propagation, and the pools all along the streams will be deeper than in most years. By the time this number of the Rod and Gun Department reaches our readers, the waters will be clear of the loosened soil and sand of the mountains, and will be in good fishing condition; the natural flies will be coming out, and consequently the artificial ones will become tempting to the hungry trout, and the worm and small slice of fish, although generally killing baits early in the spring, will have had their time, and allow the more artistic fly-fisher to display his scientific skill, and intensely gratify his pride in the frequent capture of his wonderfully active prey. If it should turn out that notwithstanding the plenty of water, the quantity of trout should not be, this year, so great as is anticipated, we have no doubt that owing to the rapidity of the increase of this fish, next season at any rate, there will be millions of them, even in the many small streams within

fifty or seventy-five miles of the city, especially if there should be a moderate rain-fall next year. But in the upper waters of the McCloud and other more northern rivers, as so splendidly illustrated in the former by that eminent landscape as well as piscatorial artist, Thomas Hill, in a late picture on exhibition at Morris, Swab & Co.'s on Post Street, there is always to be had capital sport in both salmon and trout fishing, mostly by bait angling, it is true, but also, at times, with the fly.

In general, the manners, habits, haunts, prey—and his mode of taking it—of the brook trout, *Salmo fontinalis* of America, closely resemble those of the European trout, *Salmo fario*; and this so much so, that the instructions to be given for the taking of the one will be found successful as regards the other; and the flies, baits, and general style of tackle, as well as the science of capturing, with some few exceptions, are nearly identical. As in Europe, so in this country, although there are numerous varieties of this most beautiful of fishes, almost indeed a variety for every stream, still, we may remark, and according to the opinions of the best authorities, that there is but one distinct species. Upon this coast, from the most southern portion of California all along to the most northern portion of Alaska, there are many varieties of both salmon and trout. And it is, we think, for the want of this

proper knowledge that some of the species of these two fish have been erroneously termed salmon-trout. We doubt very much whether in reality any fish of the *Salmonidæ* family should receive any such appellation. It is certainly contrary to nature that the salmon and the trout should form any amalgamation, being too distinct in their species to do so, and in this view we have found ourselves supported by the most practical naturalists and anglers. We observe erroneous local nomenclatures in many departments of natural history and knowledge, not alone in ichthyology, but also in botany, pomology, as well as in zoology, etc. Endless attempts have been made in Europe and America to distinguish and define fresh species of fishes, but these in our judgment have all failed in most instances. In this regard we are sustained by Professor Agassiz, who made some very curious experiments with regard to the color of fishes particularly, and of the *Salmonidæ* especially; and who has ascertained beyond doubt, not only that the trout of different neighboring waters are affected by the color and quality of the water, but that the trout of the same river vary in color accordingly as they haunt the shady or the sunny side of the stream. For it is a well-known fact, that the *Salmonidæ*, although many of them are migratory at certain seasons, have their own haunts and hunting grounds to which they steadily adhere, moving but a short distance from one spot, in pursuit of their prey, and returning to it when satisfied.

Thus, in a mountain-brook, you shall find, perhaps, that the pool between an upper and lower fall, or rapid, is occupied by two fish; one of these will lie at the head, the other at the tail, of the pool, the more powerful fish selecting the spot which he chooses, and neither

exchanging places, nor hunting far from their habitual haunts.

In still waters, in like manner, you will find, day after day, the same large trout will be seen under this bank, by that large stone, or in the cavity formed by the roots of yon elm or alder; and that he will not stray to any distance from it, but will seek his prey nearly in the same waters, and on the same side of the stream, the opposite bank being probably held by a rival fish.

Our California brook trout (*Salmo iridea*) differs in colors from the Eastern (*Salmo fontinalis*) which is more bright and vivid in spots and coloring, and again these vary in splendor and brilliancy from the European (*Salmo fario*), and all again are different from the Dolly Varden (*Salmo Campbells*), which has both whitish yellow and red spots, and inhabits chiefly the glacial waters of our interior rivers and northern coast and Alaska.

We will conclude our article on this subject by remarking that there is no sportsman who is actuated by the true animus of the pursuit of angling, who would not vastly prefer basketing a few brace of good trout, to taking a cart-load of the coarser and less game denizens of the waters; nor, whether we consider his wariness, his timidity, his extreme cunning, the impossibility of taking him in fine and much-fished waters, except with the slenderest and most delicate tackle (in fly fishing); his boldness and vigor after being hooked, or his excellence on the table, shall we wonder at the judgment, much less dispute it, which next to the salmon only, rates him the first of fresh-water fishes. The pursuit of him leads us into the loveliest scenery of the land; the season at which we fish for him is the most delightful of the sweetest months of spring—the very name and mention of which

is redolent of the breath of flowers, the wild rose, the abronia, and the violet, which plunge us into a paradise founded upon the rural imaginings of the most exquisite of England's or America's rural bards, teaching us that spring-time is one of those pleasant things which occurs to heighten our enjoyment even in so generally delicious a climate as that of highly favored California.

TRAVELING IN JAVA.

The line from Batavia plunges very early into a tropical forest, in which you have occasional glimpses of the white walls of the bungalows which the Dutchmen have erected for their private residences. Since the railway was opened several suburban towns have sprung up, and the builders have had the good taste to preserve as much as possible the original forest, so that there is an abundance of shade. Perhaps laziness may have had something to do with this preservation, as the tropical growth is so luxuriant and rapid that constant care must be exercised after a clearing has been made to prevent the forests overgrowing it again. Many of the trees are quite as pertinacious as our water willows in America, and some of them more so. They have a tree here which is used for telegraph poles, and unless the poles are thoroughly seasoned before they are set in the ground they speedily take root and become trees again. It makes no difference to them whether they are set in moist or dry soil, grow they will if they have the least chance. The Javanese forest is picturesque, as it contains many palm and other trees familiar to a New Yorker, and some of them are graceful in the extreme. Writing on the balcony of the hotel here, I have before me a stretch of several miles, beginning with

a river valley and terminating with a high mountain, which was once an active volcano. At a glance I can see cocoa palms with their clusters of fruit, petal palms with tufts of green at the ends of tall shafts like flag-staffs, banana, bread fruit, plantain, mangosteen, and many other trees whose names I can not recall. It is a scene of arboreal wealth not easy to surpass, even in the tropics.

As if they were not rich enough in leafy decorations, the trees are adorned with numerous parasites, some in the form of creeping vines, and others in clusters and tufts that spring from crevices in the bark where the winds have lodged the flying seed. Nourishment for these parasites comes from the air or from the trees to which they cling; sometimes the vines send down long threads, which reach the ground, where they attach themselves and throw out roots. At a little distance they look like ropes, and you gaze at them in wonder. I have seen some of these shoots 50 feet in length, and am told that they are frequently much longer. In many instances, the parasites cause the death of the trees to which they cling, but as there are plenty of trees to go round, and as they grow very quickly, no body has much sympathy for these victims of a close embrace. Some of these trees—notably the verengen—throw out shoots from their limbs, which ultimately take root, and thus form supplementary trunks. There is one of these trees in the Governor's Park which has thrown out so many roots that it forms of itself quite a grove. It belongs doubtless to the same family as the banyan tree *Ficus indica* of India, and two trees of other names but similar peculiarities, in the tropical forests of other parts of the world.

The train from Batavia halts at

numerous stations, and at many of these there are groups of natives who offer fruits and other edibles. At the first of these stations we bought samples of everything offered. Some of the fruits were excellent, and others unsuited to our organs of taste or smell, and one of our purchases, wrapped in a leaf, proved on examination nothing else than cold boiled rice. We were able to obtain that most celebrated fruit of the East, the mangosteen, and I can bear witness to its excellence. It is about the size of a pippin apple; the removal of the outer husk, which is nearly half an inch thick, reveals a white pulp as large as a small peach, and divided into sections like those of an orange. This pulp melts away in your mouth after the manner of a ripe peach or strawberry; it has a taste which nobody can describe any more than he can tell how a canary sings or a violet smells, and I know of nothing more terrible than the statement of a Yankee skipper who pronounced the mangosteens the "bang-apest fruit" he had ever seen. Possibly one might weary of them in time, but I would like to be constantly supplied with mangosteens till I want no more. I fear that the contractor would have a long engagement before him, as I have eaten many since my arrival, and without sign of fatigue. Ripe mangosteens are harmless as ripe peaches, but green ones produce colic and its concomitants, as I have reason to know, of my own knowledge.

Another fruit with a high reputation is the durian, but the taste sufficed for me. The trouble with the durian is its smell, which resembles that of a sewer, only much more so, and it keeps up this smell day after day and night after night without any effort. Residents learn to like it after a time, but the mangosteen needs no education or pre-

vious instruction. They have the mango here, but it is said not to be equal to the Indian one, and they have the custard apple, which you eat with a spoon, and find it not unlike an ordinary custard with the addition of a plentiful mixture of melon-seeds. There are a dozen other fruits of lesser consequence now in season, and I am told that as the months roll on there will be many more to come to the front. But with the exception of the mangosteen, I have seen no fruits that surpass American ones, and I certainly would not give the apple, the peach, and the strawberry, for the whole lot that Java can offer. Perhaps she may do better at other times of the year, but thus far she is unable to win me from memories of home orchards and gardens.

AN INVITING REGION.

There is not in the world a more beautiful land, nor one so well adapted to make pleasant homes, as the foothills of California. This magnificent region covers an area of more than 20,000 square miles, lying along the lower slopes of the Sierra Nevada and Coast Range mountains—the greater portion along the western declivity of the former. Among the more notable of these advantages are an equable and healthful climate, pure water, plenty of timber and a moderately good soil, which latter, while it produces under irrigation excellent crops of vegetables, as well as the grains and grasses, is capable of growing almost every kind of fruit with the fewest possible exact-ions and in the greatest perfection.

These districts are for the most part tolerably accessible, being generally not more than from 10 to 30 miles from steamboat or railroad transportation. A good deal of the land here is still a part of the public domain, and where

taken up can, as a common thing, be bought at moderate prices. As the great gold-bearing belt of the State stretches centrally along nearly the whole length of these foothills, the cultivator of the soil finds in the mining towns and camps a good market for his products, the prices for which range higher generally than in San Francisco.

Now it seems to us that a good many of our unemployed and homeless people would do well to strive and get hold of a piece of land somewhere in the region mentioned. The main objects to be kept in view in selecting a spot for settlement are proximity to a local market, and in the absence of this, facilities for shipping to San Francisco. Water for irrigation is also a consideration of the first importance. As regards soil, climate, wood, etc., there is not much room for choice, this region of country being so much alike in these particulars that it matters little where one locates.

It is not to be supposed that a man, in repairing to these mountain slopes, will, with all their advantages, be able to live and get ahead, without hard work, careful management and economy. If poor at the start, he may even count on seeing some pretty hard times for a few years at first. The summers are hot, and at an altitude of 3,000 or 4,000 feet; there is some snow in winter. But this is rather higher than the zone that offers best inducements for settlement, and along which little or no snow ever falls: Then, there is the drought to contend with, and this is really the most serious drawback to land culture in this part of the State. But ditches are being multiplied every year and no considerable district will, after a short time, be without water for irrigation. The soil here, though warm and quick, is not, except in a few alluvial bottoms, remarkably strong, and to

make it produce well, will require careful tillage, with all the manure at command for its enrichment. In short, the man who expects to raise good crops in the mountains will have to see to it that the ground is well prepared and afterwards watered, and that some additions are every year made to its strengthening and productive properties. While this is not much of a stock country, there is yet enough natural pasturage to enable the small farmer and fruit grower to keep a few cows and hogs, with the addition always of some sheep or goats if he desires it. Poultry invariably does well. As for health, these foothills are a perfect sanitarium. A more salubrious climate is nowhere to be found. The earlier settlers in this part of the State were originally farmers, and coming, many of them, from the South and West, will be found a hospitable and obliging sort of people, disposed to receive new-comers kindly and assist them all they can. If the stranger seeking a home is, therefore, the right sort of a man, he will be able to obtain from these pioneers much useful advice, and sometimes more substantial aid if he requires it, all of which will make him feel at home and be otherwise of service to him.—*Mining and Scientific Press*, March 16th.

SPARE THE BIRDS. — We never hear the sound of a gun without thinking how much damage is being inflicted upon the best interests of the State by the inconsiderate and wholesale destruction of birds that is taking place. We find each year that our fruit and vegetables are being attacked in a greater degree by insects which used to be consumed by birds. If the indiscriminate slaughter of small birds is much longer permitted we shall be overrun here by similar pests to those which

have made the raising of soft fruits, such as the Plum, Apricot, and Cherry so difficult in the Atlantic and Middle States. This difficulty has been experienced to such an extent in France that the Minister of Agriculture some time since issued a circular to the different Prefects which is required to be periodically read in all schools, forbidding boys from entrapping or killing small birds, and making parents responsible in penalties for a breach of such regulation. The town of Alameda has a law against shooting in the public highways or upon private grounds without the consent of the owner, but it is not enforced as it should be. Nearly all the slaughter of birds is done by strangers who come here from San Francisco, and a few arrests would stop the practice. But we need further legislation to protect birds in places where there is no municipal organization. Without such a law, in a few years California's fame as a fruit-raising State will have departed, and we shall be compelled to resort to the importation of birds to replace those we are so thoughtlessly allowing to be destroyed.—*Alameda Argus.*

INSECTS AND ARTIFICIAL FLOWERS.—In a late number of *Nature* a short account is given of some experiments recently made by Prof. J. Plateau, of Ghent, as to insects being deceived by artificial flowers. In connection with the subject the following incident will not, I think, be considered uninteresting. I was coming by one of the lake steamers from Como to Menaggio, in September, 1875, and saw a humming-bird hawk moth, *Macroglossa siellatarum*, fly to some bright-colored flowers on a lady's hat on deck, and hang, poised over them for a short time, and then fly away.

During the process it made one of those short familiar darts off, for a moment, and then returned, after the manner of the moth when disturbed, and it remained long enough to convince me that it had tested the flowers and found them wanting. Another incident came across my mind while writing this, which, though it does not exactly bear upon the point, yet is of a somewhat kindred nature. I was crossing from Harwich to Antwerp in August of the same year, and as the weather was fine, and the boat crowded, I remained on deck all night. About 4 o'clock in the morning I saw what appeared to be a bird or a bat flying about the rigging. As I was watching it the funnel of the steamer poured forth a thick column of black smoke, owing to the fresh coaling it had just received. Off went the creature as soon as it perceived the change, or, at all events, as soon as the change took place, and flew for some time in and about the smoke, now darting through it, close to the funnel mouth, and then letting itself be borne along with it, for some distance looking very strange and weirdlike in the process. After awhile, as the full daylight broke, it left the smoky region above and came down toward the deck, and I then discovered it to be neither bird nor bat, but a specimen of the death's head moth, *Sphinx atropos*, whose flight I then witnessed for the first time. After running the gauntlet of several of the passengers, who tried to catch it with their hats, it settled somewhere on the spars or woodwork of the boat and escaped, perhaps to renew its flight in a similar manner the following day.

The parsnip contains less water than the carrot, and there is considerable starch, with some sugar, in the parsnip.

Selected Articles.

THE VALLEYS OF THE SIERRA NEVADA.

The magnificent valleys of the Upper Sierra have as yet attracted but little attention. Hitherto they have been used mainly for grazing purposes. But it is safe to say that California possesses an empire of arable land in these valleys, second in importance to no other part of the State. We venture the assertion, with entire confidence in its accuracy, that the arable acreage of these mountain valleys is equal to the arable acreage of the Sacramento Valley. A general idea of their great extent may be obtained by estimating the vast acreage of the Sierra, Mohawk, American, Indian and Honey valleys. Besides, there is another class of smaller valleys, which may be estimated as reaching the number of ten thousand. The foothills of these valleys can be cultivated, and the area of these foothills have the same relative proportion to their valleys as the foothills of the western slope have to the Sacramento Valley. The average elevation of these valleys is about three thousand feet, and they are so protected by the surrounding ridges and forests that the disadvantages of elevation are immensely decreased. The snowfall is great, but the temperature is in all of them less severe than in the States of Ohio and Kentucky. The abundance of wood and stone as material for fuel and building removes many of the difficulties which adhere to the colder climates. The healthfulness of these valleys surpasses that of the foothills. While malarious diseases exist to some little extent, the troubles incident to weak lungs are not felt at all. And we may safely say that in the future the brain and muscle of the State will be mainly

replenished from the population of these higher valleys. The productiveness of these valleys is no longer a matter of doubt; they produce everything that man needs. And as all the surrounding mountains may be made to produce abundant pasturage, the agriculturists of those regions will be able to combine all the departments of their calling. The great valleys already named are settled by a hardy race of intelligent people, who have demonstrated the fact that those regions possess all the qualities that can be desired. They now produce hogs, grain, and most of the vegetables.

The soil of this region is a rich vegetable mold, and generally very deep. The supply of water is abundant and irrigation is not a necessity. These valleys never suffer from drought. At the present time a market is found for all surplus production in adjacent mining regions. But as the population increases, narrow-gauge roads will provide an exit to the markets of the world. Until that time arrives, the present market with grazing, will furnish abundant scope for the enterprise of the people. The attractive scenery, the productiveness, and the healthfulness of these high valleys, will always make them desirable places of residence. The appliances of civilization can be found in every one of these valleys, and their present state of development is prophetic of grand advancement in the immediate future.—*Record-Union.*

MESQUITE GRASS.

Considerable interest has been excited in favor of the mesquite grass, said to be the native grass of Texas, based upon favorable reports made concerning it by different persons in this State and California, who have made trial of

it. There is no doubt that Mr. Minto is correct in classing it as identical with the English velvet grass, and what he quoted in relation thereto, last week, from Flint's description of velvet grass, in his work on grasses, would give the impression that mesquite, or velvet grass, is not a very valuable product. But it may be, nevertheless, a very valuable pasture grass for our use, so it is well enough to give it, as well as other grasses, a fair trial, to determine its value. Those who grow it assure us that all stock like it and thrive upon it, and that the grass, itself, yields a great amount of fodder, and if this proves to be the case, and the grass battles successfully with the fern, as we are told it does, it may be the grass best suited to our soil and climate. Mr. S. G. Reed procured a quantity of this grass from California and has made some trial of it. He says there is no doubt that mesquite and velvet grass are identical, but he does not yet appear to be positive as to the value of it. As Mr. Reed has experimented considerably with grasses we should like to have his conclusions, and we shall be obliged to any person who has made trials of various grasses if they will be good enough to write the results. It is an important subject for all Oregon farmers especially to be informed upon, and we shall consider it a favor to receive communications giving practical experience or suggestions in that connection.

—*Willamette Farmer.*

THE SUCCESS OF BUDDED ORANGE TREES.

A correspondent of the *Anaheim Gazette*, in referring to Alfred Metcalf's place just northwest of Anaheim, says: "The chief attraction on this place are two orange trees four years from the bud. On one of these trees there have

been produced this year over 300 oranges, and on the other 150. Upon the former tree there were some leaves six inches across in their widest part, and the fruit hung thickly in clusters, one cluster containing 17 oranges. A canful of the earth upon which the trees grow has been sent to the Paris Exposition as a sample of the best orange-producing soil in California. These trees themselves are substantial arguments for the budding process. Mr. Metcalf has 1,000 orange trees three years from the bud, comprising the Mediterranean Sweet and other choice varieties. He has also 3,000 young Chinese lemon trees, which he intends to transplant and bud with the best kinds of oranges very soon. In a few years he will have one of the thriftiest young orchards in Southern California. There are also upon this ranch many other kinds of fruit and shade trees, including apple, peach, plum, apricot, nectarine, fig, walnut, almond, lime, lemon, cherry, quince, red gum, blue gum, acacia, pepper, Monterey cypress and pine, locust, algaroba, weeping willow. When Mr. Metcalf began to improve his ranch six years ago, there was not a tree on it, now there are over 3,000, not counting those in the nurseries. This speaks well for his enterprise, good taste and public spirit, for I deem the planting of trees one of the most important duties of every American citizen.

PLANTS PURIFY WATER.

The purest spring water if allowed to flow through a new or freshly cleaned ditch will taste of the ground, and be unpalatable for a while. After a time, however, when plants begin to appear, it will lose this muddy taste. What vegetation does for the air it also accomplishes for the water; that is, it ab-

sorbs the injurious gasses arising from matter in decay or combustion or given off by exhalation of living animals, and converts them into plants, which in turn furnish wholesome food for some kind of an animal, from an elephant down to the larvæ of the smallest water-breeding gnat. This fact should be borne in mind by fish culturists, who should have a care that the proper plants be selected that will encourage and sustain insect larvæ and other forms of life suitable for fish food, as well as consume carbonic acid gas and throw off oxygen. It is safe to say that if all plant life be killed in the ocean all living things would soon follow.

The vegetation in the rivers contributes largely to their purity, and partly holds in check the contaminations of the cities. In great reservoirs that supply towns, the muddiness is only apparent while the reservoir is new, as plants of some kind will as surely make their appearance as in an untilled field. Sometimes in late summer or fall there is a strong fishy taste observable in many cities, which proceeds from decaying vegetation and not from fish, as the housekeeper religiously believes. This is temporary, though very disagreeable, and we know no remedy. It is doubtful if dragging up the dead matter would remedy it. When we kept trout ponds we also had several varieties of wild geese and a pair of swans. The latter cleaned out the vegetation in one pond, and the water smelled and tasted muddy. It was a small pond, 75x14 feet, and full of trout. When the plants were gone the fish all crowded to the inlet for fresh water, and the supply was increased. After this the swans were removed and when vegetation again started the fish went back into the pond.

Our experience in aquaria has proved

that cryptogamous plants, *i. e.*, those which do not flower or bear seed, most particularly the small kinds that appear as moss on stones and rockwork, are the most valuable for oxygenation. Plants whose stems only are in the water are of but little use for this purpose, therefore select those whose habit is to remain entirely submerged. Watercress and *Myriophyllum* are among the best. —*Chicago Field.*

DRYING FERNS.

The dried fronds of ferns are frequently employed in forming screens under blinds, etc., and as they are easily obtainable—collections of ferns being generally grown—some hints as to the preservation of them cannot fail to be acceptable. Get any carpenter to plane two deal boards about half an inch thick, a foot wide, and a foot and a half long; between these place one or two quires of common blotting paper. Round the boards put two narrow but strong leather straps, these must be drawn as tightly as possible, and will secure a great amount of pressure on the fronds inside; and the whole may be strapped on the top of a box in traveling, so as not to take up much room. In gathering the ferns, cut them as low down in the stem as possible, and in small specimens get up the root if you can. In putting them to dry in the blotting-paper, have respect to the natural position of the fern, and also to the size of the sheet of paper on which they are to be finally placed. When the fronds are long, and the specimens large, they may be bent so as to lie in a smaller space than they otherwise could, and if dried in a certain position will retain the form easily. It is best at first to make the pressure lightly, so as to alter the form of the plant if need

ful before it is completely dried; then increase the pressure day by day until the specimens are ready to remove. Ferns dry quickly and easily, and may without injury be kept in drying paper for some time. When, however, they are removed for final use, they should be secured, if necessary, by little strips of gummed paper, which is best prepared beforehand by covering a sheet of note paper with a strong solution of gum, which, when dry, may be kept for a long time ready for use; the thinner the strips are cut, the better, so as to hold the parts of the plant in their right position. This plan is in some cases preferable to gumming the whole plant, or portions of it, as the little strips can at any time be removed with a penknife without injuring the paper or book in which they are fixed, should there arise occasion to remove the specimens. In drying ferns, be careful to change the blotting-paper two or three times a week, so as to remove any dampness, and dry the paper in the sun, or before the fire, very often. It is best to have two sets of paper, so that one can be dried while the other is in use. Any ordinary fern will be fit to put into the folio in two or three weeks at most.—*Exchange.*

A GOOD SEASON FOR PLANTING TREES.

A more favorable season for planting out orchards or ornamental or forest trees could not be had. The soil is well saturated and will probably so continue late in the spring. Promptness and activity in this matter, however, are essential, for the season is pretty well advanced and the buds will soon be swelling, and rootlets starting. As soon as the soil will do to stir on the surface, let the holes be commenced, removing only the surface soil. After a few days

they may be dug a little deeper till they are large and deep enough. In this way time may be gained and the work forwarded. When the holes are all ready, and not till then, remove the trees from the nursery or the tree-yard where they have been kept since digging. Expose the roots to the air and sun as little as possible. Set the trees about the same depth in the soil as they were before lifting, putting the surface soil well pulverized about the roots, and the soil taken from the holes deeper down upon the surface. Mulch with half-rotten stable manure and straw, and a good growth and healthy trees will be secured.

HARDY SHRUBS.

EDITORS PACIFIC RURAL PRESS:—The season for transplanting hardy shrubs in California is at hand, and I append a list of those most likely to give satisfaction.

Deutzia.—Very few plants give more satisfaction than the various members of this genus. *D. Crenata flore pleno* is the choicest. It was introduced from Japan about 12 years ago. The flowers, which are very double, are of a pearly white on the inner surface of the petals, while on the outer part is a very delicate pink. The bush makes a strong and rampant growth, attaining a height of six to eight feet, and when laden with its wealth of bloom there is no finer shrub in cultivation. *D. Gracilis* is a later introduction from the same country, but of a dwarfer and more refined growth, never attaining a growth of more than three or four feet. The flowers are snowy white. *D. Scabra*, which also produces white flowers, is of an intermediate growth between the other varieties named.

Hydrangea paniculata grandiflora, at

the present time, is the most popular shrub in cultivation, and not without reason; its long season of bloom and the great beauty of its flowers make it a deservedly popular plant. The flowers are borne in immense panicles; on opening they are a pure white, which gradually changes to a rosy pink, finally turning to a rich brown color. The plant is in bloom from July to November. It is a strong, vigorous grower, requiring plenty of room. Like many others of our most valuable plants it is a native of Japan.

Hydrangea quercifolia is a plant nearly related to the former. It forms one of the most striking specimen plants for lawn or garden decoration. The flowers, which are pearly white, are produced in large panicles. It blooms in June and July. The foliage is also worthy of comment; the surface of the leaf is glaucous green, the under part nearly white.

Cydonia Japonica, also frequently known as the Japan quince, is one of the handsomest of the spring blooming shrubs. The flowers are of a deep scarlet hue, and borne in the greatest profusion. It is one of the few shrubs worthy of place in the most select collection.

Spiræa is a very numerous genus, furnishing us with some of our choicest shrubs; we would particularly recommend for a choice collection, *S. prunifolia flore pleno*, with superb double white blooms; *S. callosa alba* also producing white flowers but borne in large corymbs, and *S. Reevesii flore pleno* with white flowers and the most beautiful variety in cultivation. Several sorts with colored flowers will be also valuable for variety.

Forsythia viridissima. For early flowers there is no more worthy plant than this. The flowers of the brightest yellow, are produced before the foliage. For a yel-

low, flowering shrub there is none finer. Azaleas, Magnolias and Syringas are all choice subjects.

ANSWERS TO INQUIRIES.

CINERARIA.—What is the best method of growing Cineraria from seed?—J. S.

Cineraria seed, to germinate readily, must be quite fresh. Sow in pots filled with light loam or leaf mold, sowing the seed on the surface and merely pressing it with a smooth board to settle; lay a moist cloth over the surface, and, if convenient, set the pot in a hotbed, or it may be covered with a pane of glass and set in a sunny window. The seed will germinate in less than ten days; when the seedlings have made a fair start, transplant into three-inch pots, filled with rich, loamy soil.

BEGONIAS.—How soon will the Begonia bloom from seed? I have a number of good seedling plants; will any of them be worthy of cultivation?—A. L., Stockton, Cal.

The Begonia will flower the second year from seed; if they have been well attended to, they frequently flower the following winter after the seed were sown. You will, in all probability, have several specimens worth cultivation and propagating from your seedlings. All our new varieties are originated in this way.

WM. C. L. DREW, El Dorado, Cal.

FRUIT IN CALIFORNIA.—Mr. Budd, stated at a New Jersey horticultural meeting, that fruit culture in Southern California is running largely to Olives and Oranges. The market there is so glutted with fruits—especially grapes—that they cannot be sold, and are fed to the hogs. Wine is peddled at twenty-five cents per gallon, and does not pay. Raisins promise better, and the Muscat raisin grape is planted. To make raisins, the grapes are simply immersed in lye and spread on the earth to dry.

Editorial Portfolio.

OUR FRONTISPIECE.

LARGE EARLY APRICOT.

Our illustration, this month, is a colored plate of the largest of the early Apricots. This fruit, if not ranked among the finest, most highly flavored, and luscious of the precious gifts of Pomona, is still one that is deservedly esteemed by some persons, and by all for its wholesomeness. California is a region, as is well known, extremely favorable for all kinds of fruit, but is especially congenial to all fruits which produce early in the year, by reason of its general freedom from destructive frosts; and the Apricot is one of these fruits which may be termed early. The green fruit, when gathered to thin the crop, is much used in Europe to make tarts, which are there considered excellent; but owing probably to the abundance of other articles here for that purpose, the Apricot is not so much utilized for that purpose, but is much esteemed for canning in its fresh state, and for making marmalades, jellies, and preserves. The fruit when not very ripe is slightly astringent, and strengthens the stomach, but when it has just passed that condition it becomes rather clammy, less aromatic, and less easy of digestion. It is improved by being picked tolerably early and allowed to ripen to a certain degree in drawers in the house. It is said the Chinese have many varieties of the Apricot, which they cultivate both for ornament and use; the double-blossoming kinds they often plant on mounds, and the dwarf ones, planted in pots, they admit into their chambers. The barren mountains to the west of Pekin are described by a writer (Grossier) as being covered with these trees. To

this locality we may almost infer that they are indigenous; but that they exist in a state of nature elsewhere is also certain. A French author states, "I was struck with its mode of growth in Egypt where it was anciently brought from latitudes still further southward, and that the inhabitants of the deserts, called Oasis, gather and dry large quantities of Apricots, which they bring down to Egypt for sale." The result of every inquiry made by that author was, "that the Apricot tree grows there spontaneously, almost without cultivation; and as it is not known to grow in a natural state in any part of Armenia, we may justly conclude that it is an Arabian fruit."

As to the present variety shown as our frontispiece, the following is its accurate description:

FRUIT.—Size—medium to large. Form—roundish, oblong, compressed, projecting considerably on the side of the suture. Suture—deep and terminating in a projecting point towards the back or beyond the axis of the fruit. Skin—downy. Color—pale orange in the shade, fine bright orange red, and marblings or spots of deeper red in the sun. Flesh—pale orange, separating freely from the stone; juicy, rich. Stone—much flattened, oval, sharp on the front, perforated along the back, from base to apex. Kernel—bitter.

TREE.—Of vigorous growth, with large, broad oval leaves, tapering towards the footstalks or petiole, and with little ear-like appendages in place of glands. An abundant bearer, and originated in France, or probably in Egypt. It ripens in France about midsummer day, and its season here is nearly a month earlier.

SOIL.—A light, moderately rich soil, upon a perfectly dry bottom, and more than two feet and a half in depth, will

be found congenial to this tree. If the borders have to be made new, and the soil brought for the purpose be fresh, and not naturally too poor, it will be much better than adding additional richness to it in the shape of manure. The principal pruning which the tree requires, is merely a regulation of the branches when they become too crowded, which is seldom the case, as the Apricot is not remarkable for luxuriance of growth. Great care, however, must be taken to cut off as few large branches as possible, as all stone-fruit trees suffer much more from amputations of the old wood, than others do; a judicious shortening and thinning of the young wood ought to be strictly attended to, and that, and a regular removal of all unhealthy or dead wood, is all the amount of pruning required.

GARDEN NOTES.

When the Crocus and Hyacinth tops get yellow, dig the bulbs and pack them away in clean dry sand, where they are safe from the mice. The Narcissi and Jonquil tops in close bunches out of the paths, until they wither.

Stake plants running up to bloom, and tie them with strips of cloth, or, better still, of bast or ravel. Tie once around the stick, then bring the plant close up, and tie again. This obviates danger from rubbing when the wind blows. Use a lattice, or a little framework of sticks, for Carnations. Do not let them draggle in the dirt.

Shelter Lilies if in the full sun, and forming flower buds. Use a slight awning in the heat of the day, or evergreen boughs. Mulch the roots with well rotted manure, leaf mould, or grass; the blossom will be much finer.

Weed paths as needed. Scatter fine salt over the gravel. Fill up any un-

sightly gaps in the edgings before summer comes. Sow seeds of late annuals in damp spots. Make beds of Portulacas, Asters, Petunias, and Balsams.

Keep Pansy beds well picked. Give away lots of flowers. Sow more seed for fall and winter blooming. Plant in shade. Take cuttings of the best kinds. Nobody ever had too many Pansies—at least I never heard of any such person.

Cut back Cinerarias that have done blooming. Give them a few weeks' rest, and then start them growing. Re-pot, and they will pay to keep over.

Pinch the young shoots off Roses when too long; also, of Orange trees. Plant out all well rooted cuttings. Sow tree seeds in prepared beds under lath coverings.

Stir the ground frequently, and water as little as possible. Shade and mulch newly transplanted trees or flowers, if they appear to need it.

CHAS. H. SHINN.

PUBLICATIONS RECEIVED.

"Between the Gates" by Benj. F. Taylor, Author of "Songs of Yesterday," "Old Time Pictures," "World on Wheels," "Camp and Field," &c., with illustrations, for sale at Roman's, Montgomery street, San Francisco. This lively and spicy description of the Golden State, the El Dorado of the furthest and naturally most highly favored and attractive western region of our grand, varied, and extensive domain, is from the pen of one who has already reaped golden opinions in many literary, and other works and essays, from all quarters of the reading world, both in Europe and America. In a word Benj. F. Taylor is one of the most delightful of American authors. His poetry, as shown by many examples, is full of sweetness, and as to his prose, it is replete with fluency of style, elegance, and delight-

ful pictorial descriptiveness. It flows in exquisite harmony, and his sentences have a noble English roundness and beauty of expression. At the same time there is a large share of humor, quaintness, and originality in all his interesting productions. As suitable to our work, we take pleasure in quoting for our readers, and lovers of horticulture especially, his remarks on our fruits and flowers. He says: "Street life in San Francisco is a kaleidoscope that is never at rest. There is nothing like it on the continent. The flower stands with their gorgeous array, the open-fronted alcoves fairly heaped with floral beauty, as if Eve had just moved in and had no time to arrange her things; the glimpses of bright color from leaf and blossom, that catch the eye everywhere, in mansion, shop, and shed; the bits of bouquets you see on draymen's coat collars, and blooming from broken cups in tinkers' dens and smithies; smiling in churches in prayer-time; adorning brides with genuine orange blossoms; strewn on coffins with everlasting June."

"Then the fruit-stands that are never out of sight, with the mosaics of beauty spread upon them, as if Pomona's own self presided at the board. Rubies of tomatoes, plums and cherries; varnished apples from Oregon, as cheeky and ruddy as a fine old Irish gentleman; pears, peaches, apricots, nectarines, and those cunning Lilliputs of lemons, the limes; strawberries, blackberries, and raspberries, that melt at the touch of your tongue; fresh figs, looking like little dark leather purses, and full of seeds and sugar—all these grouped upon the same broad table; everything from all the year round but snowballs, as if the gifts of the seasons were converged like sunbeams through a lens, upon one luscious spot of summer luxury and brilliance. You halt if you

are not hungry, for you have learned that the richest beauty is not always in the flower. You find that fruit goes by avoirdupois; peaches are in pounds not in pecks; that it is not much cheaper than it is 3,000 miles away; that your dimes have turned into short bits; your quarters into two bits; that three bits are thirty-seven and one-half cents, and it takes forty cents to make it; that pennies are curiosities, and poor little nickels nowhere; if an article is not five cents it is nothing; if it is twelve cents it is fifteen. So you buy something at a bit a bite and move on".

"Of the future of our State the author writes: When the mines shall be impoverished and the men who worked them pass into tradition, the State will not be bankrupt, for the seasons will turn miners, and silver and gold will grow from the ground over countless acres now lazily sleeping in the sun. The wild and misty imaginings of the adventurer will vanish before the broader, steadier light of a better day, when man will toil under an enduring promise that summer and winter, seed-time and harvest, shall not fail. The training of the mountains in chemistry and hydraulics will set fountains playing and grasses growing where waters never fell nor herbage sprung. What ought not the world to demand of a land where music, poetry, painting, and architecture can flourish in the open air; where the stars march in splendor and review before the eyes of science for half the year through cloudless skies; where a man has nothing to fight but indolence and himself.

"If the ten talents are shaken from the napkin, and California is true to her opportunity, the world will wonder at the new civilization, and the evening sun, as he puts to sea, with his royal stand-

ard dipping and its glory trailing along the threshold of the Golden Gate, will bid good night to no truer promised land in the round world. The words of Bishop Berkeley will be born again in all the beauty of a fresh inspiration, and inscribed to this Ultima Thule of the new geography according to man:

Westward the Star of Empire takes its way:

The first four acts already past;

The fifth shall close the drama of the day,

Time's noblest offspring is the last!"

In speaking of the climate of this coast, he remarks that it is to blame for all our short-comings and the cause of all our excellence. The weather, which puzzles so many new-comers, is thus described: "Nowhere in America are the seasons so neighborly as in California. The impropriety of Winter sitting in the lap of Spring has made a public scandal, but when September is on whispering terms with May, and January borrows June's clothes, and July gives all her rainbows to November, it is high time to talk. The Winter is in the Summer, and the Spring is in Winter, and harvest is in seed-time, and the Autumn is lost out of the calendar altogether, and the siroccos blow from the north and the cold winds often from the south, and you must sail by the almanac or lose your reckoning and get lost in the weather."

"Transactions of the Massachusetts Horticultural Society, for the year 1877. Part II." Boston, 1878.

Through the courtesy of Robert Manning, Esq., Secretary, we have the pleasure to acknowledge the receipt of these valuable and model reports of the Committees on Plants and Flowers, Fruits and Vegetables, with a statement of the prizes and gratuities. This flourishing and far-advanced society, should present itself as an example to us in California of what can be accomplished by the united efforts of intelligent and

worthy men, in the most useful and noble cause of horticultural improvement and advancement, aided and seconded as it is by an intelligent and energetic Secretary, who has for many years been distinguished as a writer and worker in horticulture, and especially in pomology, in a work on "Fruits and their Culture."

Report of the Wisconsin State Horticultural Society, for the years 1874-5-6-7-8 with a short Historical Sketch since its organization. Madison, Wis., 1868. Forwarded by the kindness and politeness of Dr. Joseph Hobbens, President, from whom we had the pleasure of a visit lately when he made a tour through our State. The report contains many valuable and interesting essays and reports on horticulture generally, and particularly on Fruits, with the correspondence of A. M. Purdy, South Bend, Ind., on the culture of small Fruits and Plants, and hints and directions on Grape Culture, by Geo. B. Kellogg, of Janesville, Wisconsin.

L. B. Case's Botanical Index of the new, rare and beautiful Plants, grown and for sale at his commercial greenhouses, Richmond, Ind., January, 1878. Volume 1, No. 4, contains able and practical articles on Window Gardening and the Stapelia, with handsome illustrations.

Vick's Illustrated Monthly Magazine for last month (April), beautifully illustrated, of course, as all his works are, and containing excellent papers, on the Dracæna, Chinese Primrose, California Flower notes, Flowers in Texas, new Strawberries, the Watering Pot, Gladiolus from seed, Flowers in North Mississippi, Perfume of the Rose, the Wax Plant, Destructive Insects, Horticulture in California, Pinks, etc., etc., with a Month in the Country for our Young People, and a Botany for Little Folks,

Spring catalogue of the Albany Seed Store, Press & Knickerbocker, Seedsmen, 1878; 80 State street, Albany, N. Y., embellished with neat cuts of Flowers and Vegetables.

C. H. Hovey & Co's. spring catalogue of Plants, Seeds, &c., for 1878. The facilities for this old firm's procuring desirable novelties are excellent.

FRUIT CULTIVATION AND REPORT ON THE FRUIT AND VEGETABLE MARKET.

As the Apricot is the subject selected for our frontispiece this month, although the particular variety there given is described in another portion of our work, we will in this place make a few general remarks upon its history and cultivation. Travelers describe this fruit as abounding in Japan, and attaining the size of a large spreading tree. They also inform us that the Chinese have many varieties of it, which they cultivate both for ornament and use; the double blossoming kinds they often plant on mounds, and the dwarf ones planted in pots they admit into their parlors. Turner in his Herbal, records the Apricot as cultivated in England, in 1562. There it is not grown as a standard as with us, but is trained on walls or on trellisses, and by this method it flourishes well in so cold a country as the north of Scotland. It is sometimes propagated by seeds with the view of obtaining new varieties as with other fruits. The most usual way of multiplying known kinds is by budding, and sometimes by grafting.

When the trees have attained a fruit-bearing state, the system of pruning to be pursued must be founded on the recollection that they bear the fruit upon the young wood of a year old. The same shoot seldom bears after the first year, except on some casual fruit spurs;

but these are not to be depended on, and in all ordinary cases spurs are to be discouraged. These spurs must not be shortened in the winter nor spring till it can be ascertained what part of them are provided with leaf-buds. They are usually pruned at different seasons of the year; in other words, they receive what is technically called a summer and winter pruning. Such shoots only as are wanted to fill vacant spaces, and to furnish the tree in every part with fruit-bearing wood, should be retained, and not one more; for every one beyond what is absolutely required for these purposes, has only the effect of crowding the tree with a superfluity, which will have to be cut out at a future period, and the nourishment which they abstract is thus so much taken from what ought to go for the benefit of the fruit and the maturation of the wood and buds for the succeeding season. Newly planted trees require a species of pruning to modify them into proper shape and form similar to the early pruning of the Peach and Nectarine. The Apricot in general sets its fruit in clusters, which if not thinned at all renders the fruit liable to push each other off, besides, they can never attain their proper size and flavor. The fruit, if allowed to remain on the tree till it be over-ripe, loses its aromatic flavor, becomes clammy, and is not easy of digestion. It should be gathered at least twenty-four hours before it acquires its last degree of maturity. When intended to be kept for any particular purpose beyond its natural duration, it should be gathered before it is much more than half-ripe, and placed in an ice-chest, or cold chamber, where it will ripen slowly, and hence be rendered fit for the dessert two or three weeks later than if left on the tree.

As respects our markets lately, and

for some time past, there is not much of novelty to record concerning them. Supplies of California Oranges have continued plentiful for some time past, up to the daily consumption, but with rather high prices. Strawberries did not arrive in abundance till about the end of April, when their quality was much improved, of which there was much need. The first arrivals, which were three weeks later than last year, were very pale in color, small, and gritty from the great rains and violent hail storms. There was too little sun to produce them early and to make them of a good complexion and of fine flavor. Indeed, early in the season every year they are too acid, and therefore not very palatable unless much assisted by sugar and cream. Oregon Winter Apples became scarce in the market last month (April.) Asparagus and Rhubarb came in freely about the middle of April.

Other early spring varieties of vegetables, came in in very limited quantities owing to the backward season. The fruit crop generally is very promising, there being no frosts up to the beginning of this month (May.) New Potatoes came in from the south towards the end of April, and were of fair quality.

The *Commercial Herald* in its issue of the 18th of April, exhibited a most full and satisfactory display and statement of our trade and commerce at this point. It showed great enterprise, industry and energy in its making up, and may be called a wonder in its line of business on this coast and elsewhere. We quote from this paper the following report:

"Our import tables, both by sea and rail, for the quarter are so full and complete as to do away with the necessity of elaborate details. Our home

products of raisins and dried fruits, nuts, etc., increase so rapidly, year by year, that they will soon drive out all imports. Our canneries now furnish full supplies of Case Goods—Fruits in variety. Vegetables of all sorts, Salmon and Meats of good quality. It is true that we still continue to draw supplies from the East of Oysters, Clams, Lobsters, Pineapples, Green Corn, Condensed Milk, and some few other canned goods of this nature, but we have Peaches, Berries, Apricots, Tomatoes, etc., in quantities to offset them. Oranges, Lemons, Limes, etc., are here in liberal supply, and we will soon be able to supply the whole country west of the great rivers with all these choice fruits, including Raisins, Almonds, Walnuts, etc. Figs, Zante Currants, and Hungarian Prunes are yet imported via New York, but these will not long be wanted, as California and Oregon will soon be able to flood the entire western world with Dried Apples, Apricots, Peaches, Prunes, Currants, Grapes, Raisins, Figs, etc. The Alden and other patent fruit dryers are being extensively used here in utilizing our fruits in their perfection. We give the following price list of the California and Oregon Alden Evaporated Fruits and Vegetables: Apricots, in 50 lb. boxes, 20c per lb.; do. in 2 lb. paper pkgs, 48 lbs. to case, 22½c per lb. Apples, in 40, 50, and 60 lb. boxes, 12½c per lb.; do. in 10 lb. boxes, 14c per lb.; do. in 2 lb. paper pkgs, 48 lbs. to case, 15c per lb. Cherry Currants, in 50 lb. boxes, 16c per lb.; do. in 10 lb. boxes, 18c per lb. Corn, Sweet, in 50 lb. boxes, 25c per lb.; in 1 lb. paper pkgs, 40 lb. to case, 27½c per lb. Pears, Bartlett, in 50 lb. boxes, 22c per lb.; do. in 12½ lb. boxes, 23c per lb.; do. in 2 lb. paper pkgs, 48 lbs. to case, 25c per lb.; Pears, assorted, in 50 lb. boxes,

17½c per lb.; do. in 12½ lb. boxes, 20c per lb. Peaches, pared, in 50 lb. boxes, 30c per lb., do. in 12½ lb. boxes, 32c per lb.; do. in 2 lb. paper pkgs, 48 lbs. to case, 32c per lb.; do. unpared, in 50 lb. boxes, 16c per lb.; do. in 12½ lb. boxes, 17c per lb. Plums, pitted, in 50 and 70 lb. boxes, 20c per lb.; do. in 12½ lb. boxes, 22½c per lb. Mission Grapes, in 8½ lb. boxes, 75c per box; do. in 3 lb. paper pkgs, 72 lbs. to case, 10c per lb. Onions in 20 and 30 lb. boxes, 32½c per lb.; do. in 2 lb. pkgs, 48 lbs. to case, 33½c per lb. Potatoes, sliced, in 20 lb. boxes, 14c per lb.; do. pulverized, in 2 lb. paper pkgs, 48 lbs. in case, 15c per lb. Muscat Raisins, in 25 lb. boxes, \$2 50 per box; do. in 12½ lb. boxes, \$1 37½ per box. Tomatoes, in 12½ lb. boxes, 55c per lb.; do. in 2 lb. paper pkgs, 57½c per lb. Marrowfat Squash, in 50 lb. cases, 16c per lb; do. in 2 lb. pkgs, 48 lbs. to case, 18c per lb. String Beans, in paper bbls, 30 lbs. each, 55c per lb.

On the 16th of April the first box of ripe Cherries was sent to San Francisco from Briggs' orchard, near Marysville. On the 18th of April T. J. McCormick picked the first basket. The crop is large.

On the 20th of last month (April), new Potatoes arrived more freely, and prices were lower. The unfavorable weather retarded the Strawberry crop, as well as other kinds of fruit. A small quantity of Cherries from a ranch on the Sacramento River arrived, and were the first of the season from that quarter. A few String Beans made their appearance in the market and at once sold for fancy prices. Strawberries begin to come in of good size, color and fine flavor. Owing to the backwardness of the season, all kinds of fresh Fruits and Vegetables were still rather dear, and remained so till finer weather sat in.

About the latter end of April, there were small arrivals of Gooseberries, Cherries, Tomatoes and String Beans.

THE AURATUM LILY.—James Vick, who cultivates thousands of this lily, says he has not discovered why so many die suddenly after they have sent up vigorous flower stems, but he finds it do best in partial shade, or among thin shrubbery, and in such places he grows the strongest plants. In another place he gives directions how to restore lily bulbs received late in spring and in a shriveled condition. Wrap them in slightly damp moss, and bury them in damp, not wet sand. They gradually absorb moisture, and are thus restored. We have long been in the practice of restoring shriveled trees, and especially dried grafts, in this way. If either bulbs or dried scions are placed in water, they become soaked and rot.

METEOROLOGICAL RECORD.

FOR THE MONTH ENDING APRIL 30TH, 1878.

(Prepared for THE HORTICULTURIST by THOS. TENNENT, Mathematical Instrument and Chronometer-maker, No. 18 Market Street.)

BAROMETER.

Mean height at 9 A. M.	30.01 in.
do 12 M.	30.01
do 3 P. M.	30.00
do 6 P. M.	30.00

Highest point on the 1st at 9 A. M.	30.24
Lowest point on the 19th at 9 P. M.	29.73

THERMOMETER.

(With north exposure and free from reflected heat.)

Mean height at 9 A. M.	59°
do 12 M.	64°
do 3 P. M.	64°
do 6 P. M.	58°

Highest point on the 17th at 12 M.	75°
Lowest point on the 19th at 9 A. M.	48°

SELF-REGISTERING THERMOMETER.

Mean height during the night	49°
Highest point at sunrise on the 9th	58°
Lowest point at sunrise on the 15th	39°

WINDS.

South-east and south-west on 5 days; north-east and north-west on 4 days; west on 18 days; East on 3 days.

WEATHER.

Clear on 10 days; cloudy on 8 days; variable on 12 days.

RAIN GAUGE.

	Inches.
14th	0.14
15th	0.27
18th	0.03
19th	0.52

Total	0.96
Previously reported	30.03

Total for the season. 30.99



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GAUBERT, JOSEPH (South San Francisco Nursery), 619 Sacramento Street.

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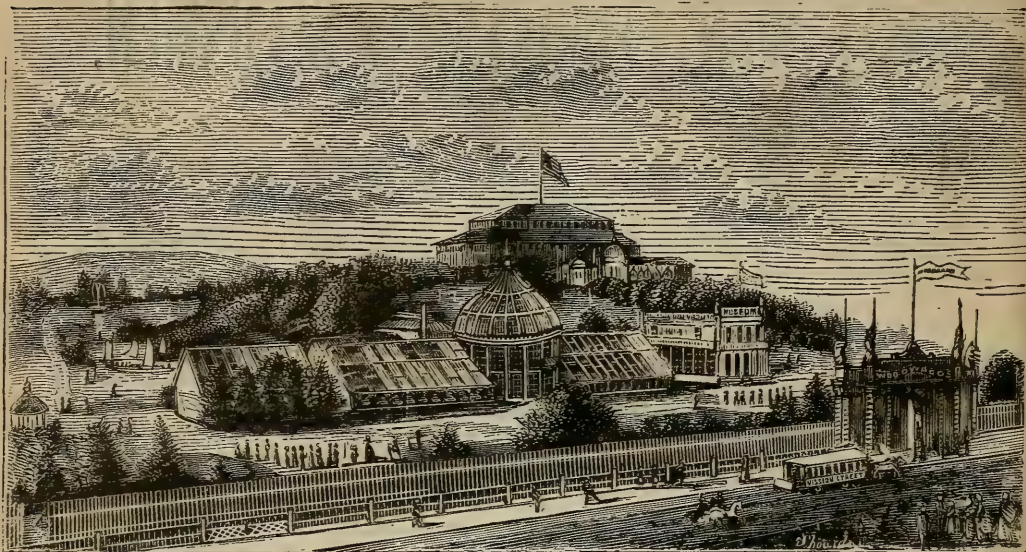
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THE

California Horticulturist

AND FLORAL MAGAZINE.

VOL. VIII.

SAN FRANCISCO, JUNE, 1878.

No. 6.

HYBRID FLOWERS.

BY FLORIST.

It has been discovered, that if two plants are very near relations, the pollen of one will act upon the stigma of the other, just as well as if the pollen was produced by the anthers of the plant to which the stigma belongs; but when the seeds so obtained are sown, the plants which they produce are not exactly like either of those from the intermixture of which they sprang, but bear a strong resemblance to both. For instance, if the pollen of a plant with blue flowers be placed upon the stigma of one with red flowers, the result will be a plant with purple flowers; or if a plant with vigorous growth is thus intermixed with another of a very dwarf habit, the plants which spring from seeds thus procured will be neither very dwarf or very tall. Flowers produced in this way are called *hybrids*. This intermixture will only take place between plants closely related to each other. As a general rule, two different species will not hybridize, but there seems, in many cases, to be no limit to the power of intermixing varieties of the same species. To produce a hybrid,

the anthers of the plant which is to afford the seed must be cut off as soon as possible after the flower expands, and before they have burst to discharge their pollen. The anthers of the other plant must then be watched, and as soon as they burst the pollen must be collected with the point of a camel's hair pencil, and preserved in a paper till wanted. As soon as the stigmas of the seed-plant are observed to become moist, the pollen must be applied to them by means of the pencil. A very little will be sufficient. The stigmas usually become moist a few days after the flower has expanded; and the pollen should be applied to them in the morning, as the moisture often dries with the heat of the sun, and when the stigma is dry it can not suck up the pollen. The pollen will keep a long time; in some cases two or three years. The plant that is to bear the seed should be planted in good soil, and frequently watered; and a bit of thread should be tied round the stalk, below the flower, to indicate which seed has been hybridized. The seed should be sown in pots as soon as it is ripe; and if the plant is at all tender, the pots should be kept under cover during

winter. For those who wish to try the experiment for curiosity, perhaps the most convenient subjects would be any two varieties of *Pelargonium*, or *Geranium*, as they are usually called, or of any species of *Phlox*.

THE PANSY.

BY W. C. L. DREW.

There is no more popular plant in cultivation than the many-colored Pansy of the present day. The Pansy, or *Viola tricolor*, is a native of Europe. Originally it was a poor little insignificant flower blooming by the roadside unnoticed. It is now one of the grandest of our garden flowers.

One of the chief objects to be desired in this flower is symmetry; the petals should be large, broad and flat, lying upon each other so as to form a circle, and prevent anything like angles or intersections of this circular outline. The petals should be as nearly of a size as possible, the two top ones being the largest, but so covered with the two side ones as not to appear disproportioned. The colors should be clear, brilliant, and not changing; a light, changeable or mixed color is reason enough for discarding any plant as imperfect, without regard to its perfect symmetry. The eye should not be too large, and it is accounted most perfect when the penciling is so arranged as to form a dark angular spot.

In regard to size, the flower should be at least one and a half inches in diameter when the plant is in its most perfect state; a very large flower if not of perfect symmetry and color, is not as desirable as a smaller one with these favorable points; frequently, however, plants which produce flowers two inches in diameter in early spring, will furnish

very small specimens during the summer season.

While there is no plant of easier culture, it is seldom that a perfect plant is seen in an amateur's collection. To have fine blooms the plant must be vigorous, healthy, and a rapid grower. The leaves should be large, quite as broad as long, (I have never yet had a good bloom on a plant with long narrow leaves, consequently always discard such in setting out,) of a rich, dark green color, crenate and not serrated or lobed on the margin, petiole short and broad. The plant should be compact, dwarf and close; all long or straggly branches should be pinched off; no plant should be allowed to grow more than four inches any one way from the root, as it becomes straggly and ugly.

In the fall the plant should be cut back close, if it is desired to keep it over for another season. This cutting back should be done early enough to allow it to start new shoots before cold weather sets in.

There is no handsomer bed than a bed of Pansies, but to come to its most perfect beauty, it should be shaded from ten until four o'clock from the fierce sun-rays of our California summers. The soil should be deep, light and very rich, the richer the soil the finer the blooms. Water must be given freely, the soil must not be suffered to become dry or the flowers will come small and imperfect. In conclusion I would say a double Pansy is positively undesirable, if not ugly.

FLORIST'S PINK.

BY W. C. L. DREW.

The rage, during the last few years for annuals and flowers blooming the first season, has almost displaced many of the old-fashioned perennials which

were so extensively cultivated ten and twenty years ago. One of these is the Florist or Garden Pink — *Dianthus Hortensis*.

Professional florists have not neglected it, however, for we find of late years it has been greatly improved in size, duplicity and shape. These results are to be credited chiefly to nurserymen and florists who keep the plants for sale, and not to seed-growers or dealers.

The wonderfully improved varieties are usually held at exorbitant rates, and on this account this very desirable and fragrant perennial has not become as popular and generally cultivated as it should be.

There are a great many varieties of Pinks, the variety, however, we speak of, is one of the oldest in cultivation, and, excepting the *Chinensis* section, the most deserving in cultivation. The plants are not as large as those of other strains, but of fine habit, of rich and diversified colors, and deliciously fragrant.

The plants do not usually furnish flowers until the second season, and this is the only thing that can be said against its culture, as they are hardy, thrifty, and of easy culture.

For winter blooming they are also worthy of attention, as with a little protection they will furnish blooms constantly.

THE ART OF BEAUTIFYING OUR HOMES.

BY CHAS. H. SHINN.

A quaint legend says that as our first parents were driven from their Eden, Eve, sighing for the lost garden, reached back for some token. The angel, pitying her, looked away, and she gathered a branch of roses, which afterwards grew over the wanderer's humble home, and has been loved by their restless children ever since.

The instinct of Eve is the instinct of every woman's heart. The most unselfish of arts is that of home-beautifying—of creeping vines and laden boughs, and daily delights of blossom. The rose-branch of our mother Eve shades the doorway of many a home to-day.

Men love a climate where they can see perpetual growth, and mingle fruit and blossom; and the sturdy northern races turn back to the warmer lands, and to the charm of sunny, Grecian skies, where art and nature reach their highest development. Here, with our new soil, and our perpetual freshness of atmosphere, we ought to make the fairest gardens, and the sweetest homes of the world.

Indeed, California ought to take the lead in originating new varieties of fruits and flowers. We want our wealthy horticultural amateurs to take up this work with enthusiasm. Let us have our Durand in strawberries, our Kirtland in cherries, our Van Mons in pears, our Rivers in peaches, our Van Houtte in gladioli. The influence of a few leaders is wonderful—flowers, before rare, can be made popular, and exhibitions, purely horticultural, can be maintained in place of horse-racing and pool-selling, so common at many of our so-called fairs, and so repugnant to every thoughtful person.

I have heard of a lover of music who wandered on foot over the world, that he might hear the songs of the people, and the sound of nature, in their infinite pathos and variety. He stood at palace gates, and by the abodes of poverty. He heard the mother hushing her sick child; the sailor boy singing on the open sea; the prima donna weaving her sweet enchantment; the winds moaning in the forest; the bees murmuring in the grass; the river's laughter

on its ledges of rock; the ocean with its continual, faltering cry, its low trembles, and its stormy wrath. So, by listening to all the sounds of men and of nature, he grew to understand the hearts of both. For when we have studied one thing well we may interpret many.

Now, I have thought that even in like manner a man could journey the world over to study the gardens of the children of men. Here he might pace the state-ly walks of a king's arboretum, full of rare trees, and linked with history; there he might feel the pathos and tenderness of a child's pet corner of pinks, marigolds, and brown, fragrant wall flowers. He might see aristocratic bedding plants of salvias and begonias set in slopes of green turf around the dwellings of wealth; or possibly be interested in a common geranium kept in a box on the porch of some poor washer-woman, or a sweet pea trained by the hands of a crippled child. He would see gardens where art had supplemented nature with rare and costly grace. There might, also, be neglected and broken-hearted gardens, where sagging gates led into a wilderness; but even here nature would make some picturesque, artistic loveliness, some wildling rose would bloom above the weeds, some graceful grass would cover the neglected steps. Our wandering student of gardens would find everywhere that the hopes, sorrows, and histories of men are written on the friendly earth—our gardens become revelations to ourselves.

The love of beautiful homes is the heritage of an elder race. Poets sing of cottage joys and of cottage flowers perpetually; of roses and modest daisies, and clusters of fragrant lilies. Worn toilers in the cities dream over counter and ledger of quiet homes near the rest-

ful mountain peaks, and under the azure southern skies. The honest mechanic, coming home at night, loves to feel the sprays of his favorite Wistaria brush his face as he climbs the steps, or to pluck his own grapes from the tangle of vine overhead. The golden age began in a garden, and in a garden it comes again.

In our climate we are able to depend mainly on shrubs and permanently flowering plants. Annuals, so effective elsewhere, need only to be used for cut flowers and masses of color, in which last they excel. The best hybrid Fox-glove (*Digitalis*); Canterbury Bell (*Campanula*); the Columbine (*Aquilegia*) for shady places; Portulacas, Asters, and Stocks for masses—these, and others, we must still retain. Through all changes of climate we love the flowers of childhood, the clove pinks and sweet peas.

But, we are learning, too, that all the succulents, the Echeverias, Sedums, and similar plants, will endure our driest summers without water; that the double-flowered Geraniums, and possibly the tuberous-rooted Begonias, will succeed everywhere, and that, with due shade and precautions, we can grow Camellias, Azaleas, and Rhododendrons in our gardens over much of the State. To your orange blossoms add Camellias!

The perfect garden has roses in floods—Lady Banks, Marshal Niel, Cornelia Cook, Bon Silene, and all the other favorites; lilies of Japan and California, in glowing hosts; scarlet and purple flashes of Anemones and Ranunculuses; fragrance from Mignonne, Ceanothus and Heliotrope; Pansies everywhere in shy confusion, and hidden Lilies of the Valley, and blue Violets. And alike, neath moon or sun, it is a beautiful thing.

MANAGEMENT OF CUTTINGS.

BY FLOREST.

(Concluded.)

Many of these stove plants strike root very soon after planting; thus the first set of rooted plants fit for transplanting into separate pots may be expected in about two or three weeks, another set in a month or five weeks, and so on, while some will remain unrooted for nine months, or a year. The cuttings will in general show the progress of the roots by beginning to grow; when this is observed, air should be gradually admitted to them, so that by the time they are fit for potting they may stand, without flagging, the heat of the sun. Shading should be taken off every evening, and as the plants appear to root it should be by degrees reduced till dispensed with entirely.

When the cuttings have rooted sufficiently to insure their safe removal to separate pots, they should be taken very carefully out of the mould or sand in which they have been hitherto growing, and as the preservation of the roots is the principle object to be attended to, it will be well to turn out the contents of the pot carefully on the potting-table, so that the roots may be singled out and separated from the mould without breaking or bruising any of them. This is perfectly practicable in regard to the large growing sorts, but the smaller kinds will require to be taken out in small patches upon the point of a knife or thin piece of wood, when they are separated from the sand or mould in which they have been struck; they should then be as speedily as possible planted into thumbs, or small or large sixties, as their size or condition demand. The mould now to be used is that in which the plant is found

to succeed best in when full grown; but in regard to the smaller and more delicate ones, a soil much lighter, and the mould reduced to a finer consistency, will be advisable.

When potted off they should be gently watered, and then placed in the pit on the surface of the bed, and covered with hand-glasses for a few days till they have taken fresh root in the new soil; these glasses must be progressively removed as the plants get established. It will be necessary also to shade them during the first few days; but this shading, like the removal of the glasses, must be progressively dispensed with.

Their whole culture depends on the regularity of the supply of air, heat, light and water, and as they extend in growth frequent shifters, until they are in a state to take their place in the stove.

Grafting and inarching are sometimes, but rarely, practiced on stove plants, and some species difficult to strike by cuttings are increased by layering.

Some sorts of stove plants, such as *Jacquinia arborea*, are propagated from the leaves, which should in the case of this plant be stripped off and planted round the edge of a pot, filled with sandy leaf-mould, being previously well drained; in six or eight months they will send up a stem which will form the future plant. In like manner the *Gloxinia*, *Gesnera*, etc., will form leaves planted in a similar way from tubers from the base of the leaf-stalk, which will the season following send up a shoot and make good plants. This mode of reproduction is frequently had recourse to in the case of succulent plants, such as *Gasteria*, *Aloe*, etc., particularly those kinds which neither send up suckers, nor divide into branches; and many species of plants

produce small leaves on their flower-stems, which, as in the case of *Echeveria gibbiflora*, *E. grandifolia*, etc., if laid on the surface of the mould, produce plants. But the most curious mode of reproduction we think is that stated by Professor Thouin, that certain flowers and fruits have this property, and as an instance of the former we may state that of the corollas of the *Arum appendiculatum* producing plants in the garden of the Taurida Palace at St. Petersburg.

GENERAL MANAGEMENT OF AQUATIC PLANTS.

BY FLORIST.

The genera which chiefly claim attention on account of the beauty of their flowers are the family *Nymphaea*, *Limncharis*, *Menyanthes*, *Pontederia*, *Nelumbium*, *Aponogeton*, *Euryale*, etc., and as a plant historically interesting, the *Cyperus papyrus*, and the Rice plant, *Oryza sativa*. Almost all aquatic plants are readily propagated by seeds, or by parting their roots. The seeds of aquatic plants should be sown as soon as they are ripe, for, if we except *Nelumbium speciosum*, they lose their vegetative powers if kept long in the air; and when it becomes necessary to transport them to a distance, they are usually sent in bottles of water. In this way have been received in Europe the seeds of the *Zizania aquatica*, or Canada Rice. Seeds of aquatics are best sown in winter, and in due time they will vegetate and grow without much further trouble.

Miller & Co. succeeded well with several fine aquatic plants in an aquarium in the large conservatory of their Botanic Gardens on Mission street, and, with gold fish swimming in the pond, it presents a very attractive appearance.

The genera *Limncharis*, *Pontederia* and *Aponogeton*, propagate freely by parting the roots, which becomes a measure of necessity on account of the rapidity of their growth; the two latter are comparatively hardy, and, in our mild climate in the interior, will readily stand our winters in open ponds. They may also be successfully cultivated if planted in deep pans or tubs, having nine inches or a foot of strong rich loam in their bottom, and filled to the depth of a foot or eighteen inches with water, which should be occasionally changed.

The genus *Nymphaea*, having tuberous roots, should be examined annually in the fall, the small ones removed, and the larger ones kept for flowering; these roots should be planted in small pots of the size called large sixties, one root in each, and kept dormant till spring by being kept rather dry. In February they should be forced into a vegetating state by the application of water and perhaps a small degree of heat, and as soon as they have sprung about half an inch should be planted either into the bottom of the aquarium or pond, or into deep pans or tubs, in a rich, light, loamy soil, to be placed near the light in a warm sunny situation. The full depth of water should not be let upon them at first; a few inches only over the roots is sufficient, but as they extend in growth add more water progressively until the vessel containing them be full. When the *Nymphaeas* begin to vegetate, care must be taken that they experience no check in their growth either by a diminished supply of water or heat, or other causes; for if such be the case they will not flower, but form bulbs at the root instead. They should, if in a proper condition, show flowers in about a month or five weeks after planting, and if so will continue in flower most of the year.

As soon as the plants have done flowering, and have perfected their seeds, they die down to the bottom, and form bulbs in the soil in which they are planted. It is at this period that the separation of their roots should take place when they may be potted as above. Some species seed freely, and when such is the case, the seeds, if a great supply of plants be desired, should be sown immediately after they are ripe, in pots of light, rich mould, and immediately plunged into water to the depth of two or three inches.

(To be Continued.)

BULBS FOR THE FLOWER GARDEN.

BY W. C. L. DREW.

THE IRIS.—Standing in the foremost rank of summer-flowering, tuberous-rooted plants, we find the Iris in its numerous and richly variegated varieties. It has been a favorite flower from time unknown. It was introduced into England by the Flemish immigrants in the time of Philip II., of Spain; but we learn of it much earlier than this. History tells us that King Clovis, in 485 A. D. placed three '*fleurs-de-lis*' on his shield instead of three frogs which had been the coat of arms of his predecessors, which is convincing proof of its being highly esteemed and cultivated at that early date.

The Iris is divided into several sections by botanists and florists. Without further comment we will consider these several sections.

Iris Anglica, commonly called the English Iris, but for what reason it would be hard to tell, inasmuch as it is not a native of England but of Southern Europe, being most abundant in Spain, is conceded by all to be the handsomest. This variety was originally called

Angelica which has been corrupted into the present title; its proper botanical appellation is Xiphidioides.

The flowers of this section are much larger than those of the other bulbous-rooted varieties, and are much more delicate. Growing in a wild state the flowers are of a delicate blue, but in cultivated strains we have them of every conceivable hue, deep purple, blue, white, lilac, violet, bright crimson, and cherry, mottled and striped in the most fantastic of manners, self-colored and shaded. The colors so harmoniously blending and shading into each other, the most perfect form and symmetry combined to place Iris Xiphidioides among the finest of garden gems.

Iris Hispanica, generally known as the Spanish Iris, botanically as Xiphidium, forms as handsome a bed as any one could desire. It was introduced soon after I. Anglica into English gardens. The number of varieties of this section in cultivation is over one hundred. In color they range through brown, lilac, blue, orange, yellow, and sulphur, both "self" and variegated. The centre petals are usually of different color from the exterior petals.

Iris Persica, the Persian Iris, is a magnificent variety. The lower petals are a rich royal purple, with white edges and orange streaks, the centre petals are delicate blue. This variety is one of the oldest and most popular cultivated varieties.

Iris Germanica, or German Iris, is the finest of the tuberous section. It is now to be had in many beautiful named varieties, and is much more generally cultivated than the other sections. It is to be had in "self" and variegated colors—yellow, rose, blue, white, cream, salmon, royal purple, maroon, and lilac. Many varieties exhibit three or four colors in one bloom.

Like all the Iris, they have an exceedingly grateful fragrance.

Iris Iberica is a new dwarf species of great beauty. The flowers are large, pure, satiny-white centre petals; the exterior petals are rich brown and purple, spotted black.

Iris Susiana, popularly known as the Lady-in-black Iris, is of the rarest. It is exceedingly handsome, but being a native of the Levant it is seldom bloomed in perfection. The flowers are very large, at least five inches in diameter. It is one of the richest and most singularly variegated of the Iris. The color is a rich dark rose, tinted and marked brown.

Iris reticulata is a recent introduction of rare merit. It is particularly adapted to pot culture, blooming in January. The blooms are very fragrant, of a rich dark violet hue.

Iris pavonia or Peacock with its handsome butterfly flowers, and I. tuberosa with its black-green edged blooms, are worthy of a place.

Take up, divide and reset the tubers or bulbs in August; they will grow in any soil, but well repay a little attention in the way of a dressing with decayed manure. With me the Iris thrives best in partial shade. I use it extensively for growing in the shade of trees, and for this use I particularly recommend it to my friends who require a plant for a shady situation. Try it.

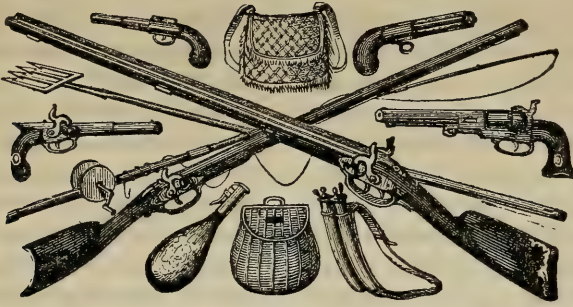
El Dorado County, Cal.

GRAPE SUGAR MANUFACTORY.

The Buffalo *Commercial Advertiser* describes the American Grape Sugar Company's works at Buffalo, New York, in a recent issue. The manufactory is seven stories high and 80 feet wide by 200 feet in depth. This enterprise was started by T. A. Judd and R. V. Pierce,

well known citizens, and the construction of the factory has been under the supervision of W. J. Allen, under whose patents most of the machinery employed was made. Speaking of these works the *Commercial Advertiser* says:

"The secret processes of the manufacture forbid going into detail or even describing minutely the appliances used. The point is, what kind of sugar does the company turn out? Persons who have claimed to be well informed on the subject, have stated that the company could not make any at all. But we had the satisfaction lately of seeing the first 'grist' of corn transformed into sugar, and testing its quality for ourselves. That the American Grape Sugar Works are a complete success, and that the article produced is as sweet and in point of color is equal to anything produced in this country or in Europe, no one can doubt who will take the trouble to compare samples. As the sugar went into the barrels it was a light cream color, and after cooling it was as white as clarified lard. It was quite sweet and left no unpleasant taste in the mouth after eating. In color and flavor the sugar made recently was as much ahead of the very best manufactured two years ago as 'A' coffee sugar is superior to the ordinary brown. We can see no reason why it could not be used for cooking purposes. The syrup, as it was taken from the vats, was also clear and colorless, and looked, when bottled and held up to the light, like alcohol." Although the product has been only a short time in the market it has been received with great favor and has become a regular and standard article of commerce. It will be found to meet all the requirements for flavoring and fully adapted to the uses of wine and liquor manufacturers, ale brewers and makers of vinegar.



Rod and Gun.

TROUT FISHING IN LAGUNITAS CREEK.

In the month of April, on the first of which commenced that most fascinating of field sports—to all anglers at least—trout fishing, I felt my heart, as usual, thrill with a natural impulse to hasten to some one of our trout streams. That stream this time was the Lagunitas, a creek near the Coast Railroad, about 16 miles beyond San Rafael. It pursues its devious and sparkling course in the midst of the beautiful redwood forests, which from that point commence to abound to a vast extent northward. Although winter here does not awaken from the long trance, which appertains to that season eastward, still with us in California nature in spring blossoms into greater life, and the animal creation regains a larger vigor. Then into the sportsman's feelings creeps a new sensation, which hastens him to his sport, which at this early season is most attractive. But let us hasten to relate what pleasant scenes and events occurred to us on this our Lagunitas fishing trip. After journeying very smoothly on the well appointed cars over this small portion of the hilly and well wooded county of Marin, and by many numerous and short curves of the road, catching often lovely glimpses of the majestic Mount Tamalpais, we reached

the small village of Lagunitas, and a short distance beyond that the water-tank, where we alighted and walked up to the small cottage of Mr. Steadman, who has a small farm and attends to the sale of redwood lumber, shingles, etc. Intending to sojourn about the creek for two days, we engaged bed and board from the accommodating host and hostess, which we afterwards found to be all that we could desire, and at a very moderate rate. Then, with rod and creel, we at once proceeded up the creek, about a mile and a half, over a smooth railroad for bringing the redwood ties, cordwood, etc., to the main road, and to that portion of the forest where the trees had ceased for the present to be cut, and where the best fishing commences, and to which point the stream had been depleted of its trout. The best part of the path or trail here stops, and the fisherman, if he is imprudently not furnished with his wading stockings, has to find his way up stream through dense thickets and over many rocks and boulders, rendering the angling, of course, pretty laborious. But the rushing and tumbling waters, crystal, clear and cool, sing a sweet music to the fisher's ears, and here and there deep and darkened pools, where dense shadows from the overhanging thickets partially hide the spots, in which generally swing the largest of the springing beauties, often falling a

prey to the fly if deftly thrown. In other places, the rivulet gushes brightly in the sun, over white stones and pebbles from small waterfalls, creating numerous ripples, where the skill of the angler is apt to triumph over his glittering prize of a good sized trout out feeding on whatever the quick flowing water may bring along with it from the upper portion of the stream. There are weird sequestered spots, where mossy rocks and boulders loom up under leaning branches, amongst the eddies pearly and white, and anon sink into gloom. Then again can be seen the gushing fount of a larger waterfall leaping over a craggy granite wall with a sparkling spray, keeping the flowers and herbage growing on the bank or in different places around always brilliantly colored and vividly green. After basketing a moderate quantity of the lively speckled prizes amid such bewitching scenery as we have attempted thus feebly to describe, we sat down beside the stream on an old and conveniently-lying log, to satisfy our hunger and recuperate our strength with a sandwich providently brought; and with some deliciously flavored oranges, the golden fruit of the Hesperides, and a cup of the cool and sparkling element so near at hand, in lieu of any strong drink (which always seems to us out of place, and perpetrating an unrefined violence to the romantic and poetic surrounding scenes), we made a delicious meal, and were soon ready again to follow our piscatorial amusement, and gratify our love of the beautiful in nature amid the charming features of this picturesque forest and flower environed stream.

A great amount of abuse has been launched by fly fishermen and others against the use of the worm, slices of fish, or in other words bait fishing. Of course this kind of fishing is quite an

optional matter, and sportsmen ought not to be twitted at or blamed, should they resort in trout or salmon fishing to nothing but the fly. But circumstances may sometimes arise, as in the earliest part of the season, when an angler, perhaps a business man, who can only go from his office or store at that particular time. He finds, perhaps, then, that the trout refuse any sort of fly, but with a worm, or slice of fish, etc., he can get a mess of fish to take home for his own delectation and that of his family. Let the fly fisherman in that case sneer at worm-fishing as utterly beneath the notice of the practical angler. To each one of our angling brethren, who is a proficient in this art, and who therefore knows its difficulty, we say, "Never argue with any mere fly-fisher, who despises the worm-fisher's craft, but ask him to accompany you to a well whipped stream for a day's sport on a warm and bright sunny day. He will be very apt to request of you a few worms before you have fished an hour, when he sees your basket beginning to fill. Give them to him and leave him to his own devices—the trout will be in little danger. Do not press the contrast between your well-filled creel and his empty one on your homeward route, for human nature is human nature, and he will be in no humor for joking, for that evening at least. You may, however, recur to the subject when you meet a few days after, and you will be very likely to find him admit that clear water worm fishing is a worthy branch of the angler's art."

Lagunitas is a capital creek to camp out on, and the further you travel up it from the railroad, the better the fishing will be found. Its angling length is about four miles. There is plenty of wood to be had for the camp fire, and the forest forms a good shelter from

high and cold winds. There is a great abundance of beautiful ferns and charming wild flowers. The expenses of two days' visit there, and the railroad fare, will amount only to about five dollars. We can not, in closing the notice of our excursion, refrain from the remark, that the reason why we did not make a very abundant bag of the coveted denizens of the creek were, first, that it was as far back as the year 1803 that we first saw the light of this our mother earth; secondly, that we did not take our wading stockings along with us; and thirdly, that the conveniently situated waters had been greatly depleted of its inhabitants before we reached them, by both lawful and unlawful fishermen.

CAMPING.

Camping is one of the resources of California. Whatever contributes to the enjoyment of many in a given region, especially if it be populous and wealthy, is a source of profit. It attracts foreign pleasure-seekers, and keeps domestic pleasure-seekers from going abroad. Such is camping, for which our State has exceptional advantages, including exemption from mosquitoes, malaria, and rain in summer, a multitude of nice situations on Government land, with solitude, game, beautiful and grand scenery, within a short distance of the metropolis, and facility in finding pleasant companions. Camping is fashionable among us, but not so much so as we think it should be, and one purpose of these remarks is to call attention to the question whether it could not be organized in such a manner as to be more common and convenient than it is.

Many rich people who visit the pleasure resorts of our State, can afford to

pay for the most costly luxuries and are not disposed to do without them. It is well that their wants should be supplied, and we do not see that there has been any lack of intelligence or enterprise in furnishing the supply. Not a great deal has been done for those classes notable to afford so much.

Although hundreds of camping parties go out every year, there are not enough, and they are usually made up in such a manner as to be open or known to a very small circle. It would be better if every unobjectionable person could without difficulty readily find admission every spring into some party intending to camp in the valley of Paper Mill, or San Lorenzo Creek, Russian, Noyo, or Eel River, Cobb or Pope Valley, the shore of Clear Lake, the Californian Alps, or Mt. Shasta, a few of the most interesting points. Yet it would be, for most persons, a difficult matter to camp at any one of those places. They do not know where to find the number of companions indispensable to the pleasure of camp life. There should not be less than half a dozen, and a dozen are better. Hundreds would like to go, but there is no method of bringing them together.

Would there not be a profit for persons living at railroad stations nearest the desirable camp grounds, to make a business of supplying and managing camping parties every spring? If some resident of San Rafael were to announce that he would establish a camp on Paper Mill Creek on the 1st of May and keep it open for a month or two, provide bedding, provisions, transportation on fixed days, saddle-horses, fishing lines, guns, and other amusements, for a certain price, the best references to be given and required, we presume that three times as many campers would go there as now go in a season. Calistoga

would be a good starting point for Pope Valley, Cobb Valley and Clear Lake; all destined to come into high favor; Cloverdale is the terminus for campers going to Mendocino; Santa Cruz for the San Lorenzo and various places in the Santa Cruz Mountains, and so on. Camping impressarios should not expect great success at first, but in subsequent seasons they would reap the reward of good management. In the beginning we shall not undertake to go into any detail; it is sufficient for our purpose to call attention in general terms to what appears an opening for enterprise.

Rustication is one of the prominent forms of enjoyment in our time. It is not only modern but very recent in the chief features of its development, and is the result of the growth of large cities, and close attention to city business. The mind demands variety. After confinement for nearly a year to narrow streets and close rooms, we long to spend a little time away from the multitude; to get into the forest and upon the mountain, to breathe the fragrance of the coniferous foliage and the buckeye and manzanita bloom; to release the attention from its ordinary burdens, and to relax the muscles and give them new modes of exercise and new motives for exertion.

No style of rustication can be so cheap as camping. There is no rent to pay; game may furnish a considerable part of the food; the other provisions may be cheap and simple; stylish dress is not in good taste, and there is little opportunity for large expenditure. The development of camping would be a convenience to art students and invalids as well as pleasure-seekers, and each class is large enough in California to deserve consideration.—*Alta*.

Two grilse caught in Bay June 1st.

A STRANGE DISCOVERY.

THE ENGLISH WHITEBAIT IN NEW YORK BAY—
WHITEBAIT DINNERS TO BE GIVEN AT CONEY IS-
LAND—WHAT PISCATORIAL GENTLEMEN THINK.

A year ago a rumor spread among fishermen that whitebait had been caught in New York bay. It had been supposed that this delicate fish was found exclusively in English waters. It is from three to six inches long, according to age. The back is a pale ashy green, and the sides and belly are a pure unspotted silver. The scales are very soft, small, and thin. It has teeth on its palate and bones in its tongue. Englishmen think it a great delicacy. The fish ascend the Thames, and spawn in the Spring. They are caught in April at every flood tide, and continue in market until September. Whitebait dinners at Greenwich have been made famous by Dickens and other writers, and very few strangers leave London in the season without trying them. A grand ministerial whitebait dinner is given at Richmond every year just before the adjournment of Parliament.

The rumors concerning the presence of these tiny fish in our waters were at last verified by Mr. J. Carson Brevoort, a wealthy gentleman residing in Brooklyn. He spends much of his leisure time in fishing and boating. Occasionally he drags the water with fine nets for the purpose of capturing interesting marine curiosities. In one of these expeditions he is positive that he caught the genuine whitebait. In a conversation with Mr. Eugene Blackford, of Fulton Market, he mentioned this circumstance, and gave him the locality. Mr. Blackford offered an old English fisherman \$50 for any caught in the bay. Satisfied that Mr. Brevoort knew what he was talking about, the old fisherman prepared a temporary net and went to

work. On April 2d he sent to Mr. Blackford a mess of small fish. That gentleman found among them three little fellows that bore all the marks of whitebait. He took them over to Mr. Brevoort. They counted the fin rays, and found them to agree perfectly with Prof. William Yarow's description of whitebait.

Since that time the old fisherman has caught a score more. One of these was sent to Prof. Baird of the Smithsonian Institute. He made a superficial examination, and said that they resembled whitebait in every particular. He was not, however, prepared to give an authoritative opinion until he had made a more careful examination.

Mr. Blackford is satisfied that he has the genuine fish. Not long ago he received a box of English whitebait from Mr. Moore, curator of the public museum in Liverpool. They were sent as samples, to see whether the fish could be found in our waters. Save that the tongue has grayish tints on the edges, the fish caught by the old English fisherman is the same. Mr. Blackford has three of them preserved in spirits in his office in Fulton Market. They are from two to three inches long. The belly is slightly curved, and has an edge like a razor. The eye is full and sets well up in the head, near the nose. The tail is split. The tiny fin stands upon the back, there is a double fin in the centre of the belly, and a single one near the root of the tail. Double fins also appear below the gills. The mouth is shad like. The writer has seen thousands of similar fish cast upon the Florida beach at high tide between Indian River and Jupiter Inlets, where they become the prey of the terns and gulls. The old fisherman is so positive that he has discovered the real whitebait, that he is now making the peculiar

nets necessary for their capture in large quantities. Mr. Blackford anticipates a full supply as soon as the nets are completed and shoals of the fish are discovered. A grand whitebait dinner will then be given at Delmonico's, and distinguished guests invited. The fish already caught were taken on the flood tide.

It is not improbable that whitebait dinners will be a feature at Coney Island during the coming summer. At the Manhattan Beach Hotel fish dinners only are to be served. Norton & Murray have already made arrangements for whitebait dinners, and Tommy Ryan, Cable, and others will undoubtedly follow suit. The thousands who flock to the island seem crazy for fish dinners. At Manhattan beach last year over 700 pounds of bluefish alone were eaten in one day at one hotel. Fresh salt water fish are the favorites. Two salmon lasted a week, while a ton of Fulton Market eels fresh from Coney Island creek failed to supply the demand. These figures may furnish some idea of what would be the demand for whitebait.

All Englishmen speak of whitebait with enthusiasm. They declare that they are more delicate in flavor than smelts, and far superior to tomcods. The dinners are expensive. Those furnished at the celebrated Star and Garter at Richmond are said to cost two guineas a head, exclusive of wine. An American who has visited London says that the whitebait are fried in butter, without cleaning. They are served the first thing at dinner. They are as crisp as the fried potatoes at Saratoga, and taste something like them. "It is a very dry, insipid fish," says our informant, "and generally comes on the table without the soup. The Britishers cover them with lemon juice and red

pepper and eat them with thin slices of brown bread and butter." The ladies never remove their gloves, but pick up the crisp tid-bits in their fingers, and nibble them with a charming relish.

THERAPEUTIC VALUE OF FIELD SPORTS.

Under this caption the April number of the *Louisville Medical News* presents the subject of out-of-door pastimes and recreation to the medical fraternity in a new light. It urges upon the profession the regular employment and prescription of exercise and kindred hygienic remedies as part of their pharmacopoeia. It urges the doctors to deal less in physic and more in natural forces. It presses upon them the importance of using and stimulating those vital forces which nature has implanted in man, and which, if properly treated, will enable the invalid to recuperate and become whole. The remedies most frequently prescribed by the Saviour in curing the sick in his day, were exercise and bathing. "Go to such a place and wash seven times!" The places were remote, and much muscular energy was necessary to reach them. But hope and confidence inspired cheerfulness and perseverance. Persistent effort set the blood in circulation, and the vital machinery to work; it opened the pores, threw out the poisonous secretions, and placed the patient in the best possible condition to render his bathing efficacious. Repeated ablutions made the cure complete. We do not remember that the Saviour or His disciples ever prescribed pills or physic.

We trust Dr. Cowling's appeal to the physicians will be heeded, and that the effects derived will presently manifest themselves all over the land. We shall hope to see every limp and disjointed invalid at the watering places become

elastic tourists, full of vigor and enthusiasm, and a desire to live. We shall wait for the spreading of the gospel of the Forest and Stream, according to the *Medical News* of Louisville, all over the land.

We believe we can, with fitting humility, take some measure of credit to ourselves for having inculcated (according to the original prospectus of our paper) a love of out-of-door recreation and sport in our true men and women; and also for having suggested to our learned contemporary the thoughts which he has placed under the caption which stands at the head of this column, and of his essay in the *Medical News*. Our reward of effort comes in the harvest gathered from the seed sown, and the following surely indicates a good crop. We quote:

"One of our best periodicals published in this country is the *Forest and Stream*, of New York, devoted to the chronicling of field sports, etc. It is a wonderfully well conducted paper, coming out once a week with its immense pages filled with material from the best of pens all over this country, sparkingly edited, and finely illustrated. No one can read its life-like sketches and not have stirred within him the love for nature which lies at the bottom of every good man's heart. But it was not because it brought such delightful pictures of the forest and field and stream to us, who, cooped up in city life, had so little opportunity of experiencing the reality, that we have made this notice of it in our pages. It was because it reminded us to point out a valuable and neglected mode of cure, and to place the medical aspects of the interests which it advocates before our readers, that we have been led to notice it in these columns intended for professional eyes.

"The practitioners of rational medicine should take care not to narrow their armamentarium down to the exhibition of drugs. Our catholic dogma that whatever has cured may do so again recognizes many more forces than the dispensatory affords; and some of these, it must be confessed, are better handled by our heretic brethren than by ourselves. The hygiene of the water-cures and the imaginative element of the homeopathic method are not to be despised. One thing is certain, that there is no more powerful agent in the control and cure of disease than amusement. Of course one can not laugh away a small-pox, or drive off a rheumatism by a few well-directed jokes—such therapeutics would in fact be a little ghastly in the premises—but in the hundred ills which are included under the names of dyspepsia, the out-of-sorts, the chronic don't-feel-wells—and even many organic troubles, which so harass the patient and puzzle the practitioner, yield oftentimes like a charm when once the mind is diverted from their continual contemplation. We are in the habit of prescribing travel for these affairs; but travel is an expensive thing which few can indulge in, and does not always amuse, but rather substitutes one labor for another. When Newport or Niagara have failed, and your alteratives get no results, and you are puzzling yourself sometimes what you will do next, try the prescription of R., Go a-fishing; or, Sig., A hunt daily for a week or two, and see if you know your man when he gets back. They are the most rational medicines that one can take. In them psychological and physiological forces combine to lift the life-machine from the ruts into which it may have fallen. You say that malaria lurks in the fields?—corduroy is a better protective than quinine; that wet feet

bring on colds?—never, when dried by a camp-fire. You say that your patient has no fancy for that sort of thing? We have yet to meet one who does not like it when he has tried it. It is part of our original nature to love it. In every one there rises at times a desire to break away from the trammel of civilization and go wild. The baby, just able to toddle, pitches its tent in the nursery, with a chair for the ridgepole, and mother's shawl for the canvas. The older urchin cooks his dirty dough by the fire built in the back yard, and dreams of adventure. The desire is just as instinctive as love, or hope, or any other passion in the human breast; and he is the wisest doctor who recognizes the voice of nature, not only when disease is at hand, but in the warning it gives of its approach. Talk about prophylactics and hygiene—a man may live longer and better with a week's camping on the Kankakee or Green River twice a year, than by following all other directions that the sanitary wisdom of the State can devise. It is not the time only which is actually spent in these delightful wilds which renovates him, but the memory of that which is gone by and the contemplation of that which is to come to renew his life day by day. Nor is it the number of fish on his string or birds in his bag that measures the restoration of his wasted energies. A glorious nibble may stir the nerve currents to the brachial plexus for months to come, and a winged partridge excite hopes that may never die. The fact is—as the man of elegant diction said when he put the pepper and salt and vinegar on the oysters he was eating—it is the "condignments" which make up the pleasure of the affair. It is the invigorating atmosphere of the country, the rustle of the trees, the waving of the green fields, the babble

of the waters. It is the fiz of the frying-pan, the aroma of the middling. These are some of the factors of delight; but above all is the sense of security against the world, the consciousness of the merchant that the mails can not reach him with the intelligence of bills payable, and to the doctor that the work of life and death is for a while in other hands—and the therapy of this placid feeling has no equal in the pharmacy of the world.

"Try it, brother, not only on your patient, but on yourself. Take the holiday in the glorious spring-time, which is now on us, that you have so well earned; go a-fishing, or a-shooting; stay as long as you please, and be assured that not a moment is lost by your doing so. You will come back twice as strong and contented as when you went, and far abler to give health to those who look to you for it.

"And, if perchance, you know of slashes where the zig-zag snipe do preternaturally congregate, or streams where the gamey bass or the solemn goggle-eye longingly waits for the lively steel-back, send word to your friends in the *News*. Our fields are shot to death; the fish of our creeks swim only in story; and we have at least convinced ourselves that May must find us by flood or in field."—*Forest and Stream*.

WADING STOCKINGS.

All throwers of the fly for trout and salmon in our rivers and brooks, are well aware of the advantage of using these, and how much time and labor they save in enabling them to pass directly up most streams instead of having to pass by their sides generally impeded by rocks, trees, and brush. Lately there have been some improvements made in these articles in forming

the foot as well as the leg of these habiliments of an India rubber which makes them lighter than those formerly in use. Goods of this description can be obtained by anglers at the Gutta Percha and Rubber Manufacturing Co., manufacturers and importers of Rubber Goods, I. W. Taylor, Manager, 501 Market Street, San Francisco, corner of First Street.

GAME IN NORTHERN CALIFORNIA.

Probably there is no part of the United States which is at all populated where game of nearly all kinds is so plentiful as it is in the northern portion of our State, commencing as far south as Marin County; thence north, is a sportsman's paradise. Deer are so numerous that a good hunter is almost absolutely certain of shooting one or more whenever he may choose; while at favorable times he may kill nearly as many as he may choose. It is no uncommon thing in some parts of Mendocino County for two hunters to bring down twenty-five or thirty deer in three or four days' hunt. In Humboldt County deer are even more plentiful than in Mendocino; and several bands of 40 or 50 each are sometimes seen in a single day. In the latter county elk are still rather numerous; but in Mendocino County they are now very scarce; while to the south of that they are never met with.

As might be expected, where deer are so numerous, they are slaughtered without mercy in season and out of season. The "ranchers," who live away from civilization, depend almost entirely upon their rifles for fresh meat, and whenever the larder is empty at night there are sure to be two or three deer hanging in the smoke-house before the next noon. But the worst enemy

of the deer is the hide hunter, who kills does or bucks indiscriminately, solely for the skins, using no part of the carcass, which he leaves to rot where it fell. It is estimated that in the counties of Mendocino, Humboldt and Trinity, over 5,000 deer have been annually killed for their skins alone, no part of their meat being used. The game law has been nearly up to this time powerless to reach these pot-hunting, unscrupulous fellows, as the few who are cognizant of these misdeeds will not, either through fear or indifference, inform against them. But we trust under the new amendments to the game laws these nefarious practices will in a short time be put a stop to. Wardens must be appointed to look after these evils in all parts of California. Bears are also very numerous in this northern portion of our slope, the most common being the black and the brown, although the cinnamons are by no means scarce. Grizzlies have been pretty well thinned out and are now very seldom met with in Mendocino County, and are not plentiful in any of the more northern counties. The cinnamon bear is rather an awkward customer if roused, and is considered next to the grizzly in ferocity. Both the black and the brown bear are timid, and almost invariably flee at the sight of man; even when wounded, they seldom show fight, unless approached too closely, when they will sometimes turn on their pursuer. They are very cunning and shy, and are much more difficult to approach than deer. None of the bears of the California coast hibernate, but merely change their feeding grounds in winter to the high oak ridges, where they can find more food. The average weight of the California black and brown bears is a little over 200 pounds.

Of small game the hills and valleys

are literally full, and fifty brace of valley quail is no very uncommon bag for one gun. The mountain quail, a most beautiful bird, is not quite so plentiful, but can be found in goodly numbers. During the season, the coast is literally alive with wild ducks, principally mallards, teal and black duck. Wild geese come and go in clouds, and when the southward flight begins the fowlers enjoy their favorite sport until fairly satiated, and the same thing occurs when the geese return laden with the plumpness acquired at the expense of the wheat fields of the southern counties. Snipe shooting is poor, and woodcock there are none.

About the middle of October the salmon of several species begin to swarm into the rivers of the northern coast, and then the turn of the fishermen comes. The Pacific salmon will not then but very seldom take the fly, but will strike readily and fiercely at the spoon bait. Provided with a good stiff trolling rod with its heavy reel, a 100 yard salmon line, a good single hook or a triangle of hooks to his spoon, the angler seats himself in the stern of a light skiff, which is rapidly propelled up and down stream or tide water by the powerful arms of a sinewy rower or boatman. Forty yards behind, the spoon flashes through the white spray, a fierce tug on the line, a whirr of the reel and a rod much bent, and he knows he has fast a 10 or 15 pound fresh-run salmon. To free himself, the fish will sometimes jump six or eight times clean out of the water, and the result will chiefly depend upon the skill of the angler himself. From eight to twelve pounds, varying in weight from 9 to 18 pounds, is a fair day's sport for one rod handled alternately by the rower and the fisherman.

About this same time vast numbers

of "smelt" (so-called), a species of the salmon family, enter the rivers and afford fair sport for light rods, and a delicious fish for the table; although looking much like the Eastern smelt, the California fish lacks many of the characteristics of the true smelts and is in some respects quite a different fish.

Brook trout abound more or less in all the northern, as in the middle streams of the State, and afford abundant sport either to the fly or bait fisher.

One thing in the above wants to be borne in mind, it is comparatively a new country, and roads are uncommon, and sometimes frightfully bad. Rough trails or no trails at all are the rule; therefore, the less *impedimenta* the hunter has with him the greater his comfort and the better his sport.

Selected Articles.

CALIFORNIA FRUIT.

The following extract from the very valuable and interesting Report on California Fruits, is from one of the highly intelligent and most practical pomologists in our State—J. Strentzel, Esq., of the Alhambra Gardens near Martinez, and was sent by him to the American Pomological Society for its session of 1877, and published in the Proceedings of the Sixteenth Session of the American Pomological Society held in Baltimore in that year.

1. SPECIES OF FRUITS.—It can be truly said that all the fruits of the temperate zone, and many of the semi-tropical, find a congenial home in California, and are grown in great perfection and abundance; here are many homesteads surrounded with an endless variety of growth. Cherries, Apples, Pears, and Plums thrive side by side with Olives, Oranges, Dates, Pomegranates, Figs, Cacti, Locust and Pine trees, with the

Eucalypti, Grevilleas and Araucarias. The climatic conditions and topography of our State afford locations with diverse attributes more suitable for some varieties than others; thus correct judgment is required to select the best adapted for certain uses. The long dry summer renders it imperative to provide ample supplies of water, complemented by proper culture, to make such enterprises pecuniarily profitable, but with their adequate conditions, endless crops of fruit can be raised to supply the principal markets of the world.

2. VARIETIES OF FRUIT.—The foothills of the northern part of the State, and the counties bordering the Bay of San Francisco, are well adapted for, and produce large quantities of Apples, Pears, Plums, Peaches, Cherries, Quinces, and small fruits and berries. The southern slopes of those hills sheltered from the ocean winds, more or less, except from the slight frost of our winters, are unsurpassed for the culture of the Grape, the finest foreign varieties prospering most. American varieties are very little in demand, but the Isabella is doing well; the Catawba is the poorest in flavor. Figs, Pomegranates, Olives and the Citrus family are taking possession of the land—here the dwarf Banana, Date, Palm and Pineapple will find some abiding spot. Over this great extent of country, Grapes, when once rooted, do not require irrigation even in the driest seasons. Fruit trees of all varieties in years of average rainfalls of twenty inches, do well without artificial watering; in dry years the growth of the fruit and its quality is promoted by a thorough soaking of the ground and subsequently ploughing. Berries and small fruits generally must be irrigated to secure good crops. Up the San Joaquin river and down the coast, with

scantier rainfalls and more sandy soil, a few spots are found in deep glens surrounded by springs, affording choice locations for orchards, but most of said region needs irrigation to produce anything beyond a scanty growth of grass during the winter months. Even with this, the extreme heat and dryness of the air precludes the successful culture of northern fruits, but is most favorable for the production and curing of Raisin Grapes, and many semi-tropical fruits. Nearing the Colorado river, the Banana, Pineapple, and probably the Coffee tree will reign supreme. Grapes raised in this southern belt of the country are very rich in sugar, but deficient in acids—good for brandy, but not for fine wines. The region about Los Angeles is now the centre of the Orange culture, which promises well to supply the demand of the Western States and compete in European markets with Italy and Spain. The growing and bearing trees dotting the country here and there for 400 miles above Los Angeles, attest the practicability of such being the case in the near future. The orangeries of Wolfskill, on Putah Creek, Solano County; General Vallejo, near Sonoma; the Alhambra Gardens, near Martinez, Contra Costa county, and others sheltered places, produce as choice fruit—that on Putah creek ripening earliest, and bring higher prices in San Francisco market than the best of Los Angeles growth. The large bearing trees are all seedlings, reproducing themselves, vigorous and little affected by slight frost, and if properly cared for, the fruit is of good size but rather thick-skinned, fine flavor and keeps well, specimens often remaining on the tree two years from blossom. Some seedling trees bear extra fine flavored and heavy fruit, and these are now selected to propagate from by

grafting and budding. The imported grafted Oranges are decidedly lacking in stamina, and so far as tried the fruit is often inferior to our seedlings.

The Lime reproduces itself from seed truly, and is a precocious bearer. Lemons show more sporting, but many trees produce fruit of choicest quality identical with the Sicily and of largest size.

The delta at the confluence of the Sacramento and San Joaquin rivers, but a short time ago the abode of water fowl and beaver, is being gradually reclaimed, and already is in serious competition with the garden counties in the production of berries and orchard fruits; contrary to all former experience, land thus reclaimed and having water within a few feet of its surface apparently laving the roots, promotes an astounding growth of healthy wood, loaded with the largest Apples, Pears, and Peaches of their kind—and what is more interesting, the vines are literally smothered with clusters of Grapes well adapted for table use.

The banks of the Sacramento river are covered with extensive Peach orchards producing immense crops of large sized, early ripening fruit, somewhat deficient in flavor, but afforded so cheaply as to keep the monopoly of supplying the San Francisco market.

The Strawberry trade centres round San Jose, in Santa Clara county, owing to the abundance of artesian wells most conveniently located for the culture of berries.

Alameda county, over the stretch of arable land facing the bay, swept by cool ocean breezes, is studded with Currant and Gooseberry bushes without number, and also with extensive orchards of the larger fruits, such as apples, pears, peaches, plums, apricots.

(To be Continued.)

TO THE DAISY.

In youth from rock to rock I went,
 From hill to hill, in discontent
 Of pleasure high and turbulent,
 Most pleased when most uneasy ;
 But now my own delights I make—
 My thirst at every rill can slake,
 And gladly nature's love partake
 Of thee, sweet Daisy !

When soothed a while by milder airs,
 Thee Winter in the garland wears,
 That thinly shades his few gray hairs ;
 Spring can not shun thee ;
 Whole Summer fields are there by sight,
 And Autumn, melancholy wight,
 Doth on thy crimson head delight
 When rains are on thee.

Be violets in their secret mews,
 The flowers the wanton zephyrs choose ;
 Proud be the rose, with rains and dews
 Her head impearling ;
 Thou liv'st with less ambitious aim,
 Yet hast thou gone without thy fame ;
 Thou art indeed, by many a claim,
 The poet's darling.

A hundred times by rock or bower,
 Ere thus I have lain couched an hour,
 Have I derived from thy sweet power
 Some apprehension ;
 Some steady love ; some brief delight ;
 Some memory that had taken flight ;
 Some chime of fancy, wrong or right,
 Or stray invention.

Child of the year ! that round dost run
 Thy course, bold lover of the sun,
 And cheerful when the day's begun
 As morning leveret,
 Thy long lost praise thou shalt regain ;
 Dear thou shalt be to future man
 As in old times ;—thou not in vain
 Art nature's favorite.—WORDSWORTH.

POISONOUS MUSHROOMS.

There have been a great many cases of poisoning by eating mushrooms in this State. When a case of poisoning occurs, it is generally laid to toadstools, but it is a fact that there is a poisonous fungus sometimes growing on the mushrooms ; and it is a deadly poi-

son for which no antidote has so far been found. Almost every year such cases occur, and still people will eat them. The last case we have noticed occurred some time ago at Chico. F. Hutton, Judge J. A. Clark, Ira A. Wetherbee, the landlord of the Chico Hotel, Reay, a waiter, and a Chinaman waiter were all badly poisoned. Reay died, and the *Chico Record* of the 23d has the following:

"Judge Clark, who is decidedly the worst case now, is still steadily improving, although he had a rather bad time during the night. Mr. Hutton is altogether out of danger, and he may be expected around in a few days. We saw Mr. Wetherbee on the street to-day, having recovered entirely from the effects of the poison. Last night an autopsy was held on the body of Reay at the morgue of Hallet & Loy, at which the physicians in attendance declared the stomach shows conclusively that death ensued from the poison acting much the same as lye would, to-wit: by eating into the flesh. Thus is proven the error of those who contended that the fungi was a blood poison. The stomach presented a horrible appearance. All the coating disappeared, and in one part a hole was almost eaten through."

It is at least some consolation to know that it is not a blood poison ! It only eats the stomach and bowels up !

When we were keeping house at San Francisco, some years ago, a dealer in the market wanted to sell us some mushrooms. To the objection that they might be poisonous, he said the wild ones, sometimes, had poisonous fungus on them, but the cultivated ones never. He finally, however, admitted that it might be possible for the cultivated ones to contain the poison, and stated that he, himself, always put a piece of silver

in them while cooking, avering that the poison would turn the silver black.—*Colusa Sun*, March 30th.

THE USE OF TEA AND COFFEE.

Question—Is the use of coffee and tea with our meals injurious?

Answer—They have been charged with producing dyspepsia, neuralgia, and other injurious effects upon the stomach, bowels, and nervous system generally.

I quote the opinions of the following well known authors upon this subject, and would add that my own personal and professional experience fully coincides with the views herein presented.

Dr. Johnson says: We are convinced by many years' observation that very many of the diseases we are called upon to treat, as dyspepsia, nervous and sick headache, heart diseases, paralysis, epilepsy, neuralgia, etc., etc., are the legitimate and certain fruit of these narcotic stimulants.

Hahnemann describes a number of diseases induced by these beverages, and assures us "that they are most insidious and dangerous enemies, which slowly and silently undermine the citadel of life itself."

Dr. Bell says, expressly, that coffee has a "pernicious effect upon the stomach, bowels and nervous system generally."

Dr. Shurtleff, of Boston says, "of all the common beverages drank in society, coffee is decidedly the worst."

Mr. Graham declares that "both tea and coffee are among the most powerful poisons of the vegetable kingdom."

Dr. Combe observes, that "tea and coffee not only ruin the stomach, but seriously derange the health of the brain and nervous system."

Dr. Teste says, that "coffee is respon-

sible for six or seven-tenths of the neuralgia we have to treat daily."

Question—We often hear the term "tea-drunkard." Will you tell us what class of persons is meant by it?

Answer—Their number is legion; they are of both sexes, but more of women than of men. Instead of using tea in moderation, or as an occasional beverage, they swill it down three or more times a day, in quantities that are incompatible with health. They are as much slaves to the tea-pot as the drunkard is to his bottle. They are tea-drunkards. Tea, in anything but great moderation, is a poison capable of ruining the stomach, enfeebling and disordering the heart's action, shattering the nerves and ruining the health and happiness of the victim. In few words, without holding that the use of tea is as bad as the use of alcoholic liquors, one may well believe that the total abstinence reformers have, in their red-hot zeal against rum, encouraged an indulgence in tea-drinking which will one day have to be fought against with might and main to prevent the wholesale ruin of multitudes. A tea-drunkard may be defined as one who drinks strong tea several times a day, who depends on it instead of food and rest for strength, and who can not go without it without bringing on distressing symptoms.

PAULOWNIA IMPERIALIS.

This fine tree, though it has been introduced into our nurseries for some time past, has not yet been much planted out by amateurs in their grounds. Its heavy, rich foliage, and wonderfully gigantic leaves, especially when quite young, and handsome flowers, which appear a little before the putting out of the leaves, make it a conspicuous object in shrubberies, and being generally

tolerably hardy, even in the severe climate of the Eastern States, is, of course, quite well adapted to California. The following account of this fine shade tree is taken from a good English authority, and from information afforded by an extensive nurseryman in New York.

The Paulownia is a native of Japan, and grows in that country to the height of thirty or forty feet, with a trunk two or three feet in diameter. The branches are few, but strong; and they proceed from the trunk at right angles. The leaves are very large and broad; and the flowers, which singly resemble those of the Fox-glove and Gloxinia, are produced in large terminal panicles, like those of the Horse Chestnut or the Catalpa. At a little distance, indeed, the Paulownia strongly resembles the latter tree, except in the color of its flowers; but the seed-vessels are very different; that of the Catalpa being a long, horn-like pod, and that of the Paulownia an oval-shaped nut. The Paulownia is in the natural order, Scrophulariaceæ, and the Linnæan class and order, Didynamia, Angiospermia. According to our authority, the method of its introduction into Europe was the following: In 1834, M. Neumann, the chief gardener in the Jardin des Plantes, at Paris, received some seeds in a little china pot, from Japan. He sowed them in a flower-pot, which he placed in the hot-house; but only one seed vegetated. This plant he nourished with great care, but it grew slowly, and appeared sickly. As he observed that after it lost its leaves in autumn, the heat of the stove made it bud again immediately, he felt convinced that the stove was too hot for it, and he removed it to the greenhouse, which evidently suited it better, though still it grew slowly. He now took some cuttings

from his plant, which struck readily; and he then ventured to remove the parent plant into the open air. It immediately began to grow vigorously; and though only six inches high when planted in the spring, it became three feet high before autumn, growing with a strong erect stem and forming a large, bushy head. As soon as winter approached, it lost all its leaves at once, like the Catalpa, without these becoming withered; but it regained them early in the following spring, and grew so rapidly, that in July, 1840, it was nearly twelve feet high. It was then growing vigorously, and had a profusion of fine large leaves, which cast a refreshing shade. M. Neumann protected it for several winters with mats, but he afterward found it quite hardy, and in the winter of 1844-5, when the thermometer was below zero, it did not lose even the tips of its branches. Some of the leaves measured 20 inches in breadth by 25 in length.

This plant is called Kiri by the Japanese, and Too, or Haktoo, by the Chinese; and it was named *Paulownia Imperialis* by Dr. Sieboldt, in honor of the hereditary Princess of the Netherlands, who was one of the daughters of the Emperor of Russia. It will grow in any common garden soil that is tolerably dry, and somewhat loamy; but in moist, peat-like soil, the leaves turn yellow, and fall off. It strikes readily from cuttings, and it may also be propagated by division of the roots.

Our American authority states that "the Paulownia was introduced about 35 years ago." Near that time we raised in Kentucky and near Cincinnati from a small plant, a large spreading tree about 40 feet in height in 6 years. In some of the hard winters in Kentucky it lost a few of its branches. It is a tree in its mode of growth and

even form of leaves resembling the Catalpa, only its foliage is much larger. It flowers in Kentucky at the end of May, and beginning of June. The flowers are of a bluish lilac color, sweet scented, and as we observed before, in form and size like Fox-glove. We have noticed but very few of these trees as yet in our State, and those we have seen are young, but we consider them well worthy of a place among our most beautiful shade trees.

TREE SEEDS FROM CHILI.

Much has been accomplished by introducing the useful trees and plants of other countries into California, but there are still a large number which are valuable for their timber and other products, that have not yet been imported, and which there is good reason to believe will prove perfectly adapted to the climate. The Eastern States, Southern Europe, Australia, China and Japan are now well represented, especially among fruit and ornamental trees and plants, and nearly all that have been tried thrive as well or better here than in the countries from whence they came.

A gentleman who arrived from Valparaiso by the steamer *Oregon*, some time ago, brought a quantity of seeds of six varieties of the most useful trees of Chili, and turned them over to the *Bulletin* for distribution among its subscribers. Previous to his residence in Chili, he was a cultivator of land for ten years in Alameda county, in this State, and his contribution is, therefore, all the more valuable on account of his experience and knowledge of the climate of California. These seeds have been selected with reference to the suitability for this climate, all the varieties being found growing under circumstances almost identical with those which

prevail here. Chili has the same long periods of drought and rain, with occasional frosts in winter, that characterize the seasons in California, though mid-winter there comes in July instead of January.

We desire to place these seeds in the hands of those who will take sufficient interest in the matter to give them a fair trial, and report the result to us at some future time. A few of each variety will be forwarded, as long as the supply lasts, to any subscriber of the *Bulletin* applying for them. The varieties are as follows:

Tara.—A large evergreen tree with handsome foliage, valuable for its hard, fine-grained wood; its timber is used for yokes and other purposes requiring strength and hardness. It grows to a height of 45 feet, with a diameter of one to two feet. (*Corypha Taliera*.)

Carbonilla.—A medium size, ornamental, evergreen tree. Its trunk is straight, and attains a height of 35 to 40 feet. It is a valuable hardwood tree, and its ornamental timber is extensively used in manufactures and for many purposes about the farm.

Quillaja.—A large deciduous tree, valuable for its bark. It belongs to the order *Rosaceæ*, and is described in "Smith's Domestic Botany" as follows: "About 20 species of South American trees and shrubs constitute another section, but which probably should be considered a distinct family, under the name of *Quillaicæ*. They differ from the roses, in having winged seeds, and in habit seem more nearly related to the apple and plum family. The species most worthy of notice is *Quillaja Saponaria*. A tree, native of Chili, attaining the height of from 50 to 60 feet, having smooth, shining, oval, green leaves, about 1½ inches in length, and terminal white flowers. Its bark is

called Quillaja, or soap-bark, and consists of numerous layers, containing much carbonate of lime, and other mineral matter, which renders it so heavy that it sinks in water. It is in common use in Chili as soap. Some years ago it was introduced into this country (England) and recommended as a substitute for soap, especially for washing printed goods, silks and delicate-colored fabrics. An extract of it is in great repute for promoting the growth of hair, a preparation having been brought into use and sold by hair-dressers under the name of 'Quillaja Bark.' The chemical action of this extract is very peculiar on gold, silver and glass."

The bark of this tree is extensively used in California, and is an important item in our imports from Chili. The tree grows in the neighborhood of Valparaiso, where frosts at times are quite severe, and in localities where snow has been known to fall. There is but little doubt that it will prove to be perfectly hardy here. The wood is of little value except for fuel.

Maiten.—A large evergreen tree with small, light green foliage, which in times of great scarcity of grass is fed to cattle. The limbs of the tree are cut off and the cattle thrive upon a very small quantity of the leaves and twigs. The seed when green is used to some extent as a dye. When ripe it is very oily. The wood is of no special value.

Beyota.—An evergreen tree, with thick, shining leaves three inches in length and two in width, slightly lobed, and in color resembling the California laurel. Its value lies in its bark, which is extensively used as coloring material for wool and leather. It is exported to England in large quantities, where at the present time it is worth \$225 per ton.

Puema.—A large tree, with light green foliage. Its bark is a valuable coloring material, and large quantities are shipped to Europe. The leaves are $1\frac{1}{2}$ inches long and 1 inch in width, light glossy green above and pale silvery color beneath. It bears a black berry, which is boiled and eaten to some extent by the natives and children. This and the *Quillaja* are the most valuable in the list.—*San Francisco Bulletin*.

WATERING PLANTS WITH HOT WATER.—M. Willermoz, in the *Journal de la Societe d' Horticulture Pratique du Rhone*, has pointed out the utility of watering certain plants with hot water when out of health. Such waterings render repotting in fresh earth needless, when the flagging of the plants is caused by acid substances, which, contained in the soil and absorbed by the roots, act on living vegetables like vegetable poisons. The small roots are withered and cease their action, consequently the upper and younger shoots of the plant turn yellow, and the spots with which the leaves are covered indicate their morbid state. In such cases the usual remedy is to transplant the invalids into fresh soil, clean the pots carefully, secure good drainage, and so on, often with the best results. But the experience of several years has proved the unfailing efficacy of the simpler treatment, which consists in watering abundantly with hot water at a temperature of 50 degrees Reamur, (about 145 degrees Fahrenheit), after stirring well the earth in which the plants are growing until the water runs well through the pots. At its first experimental application the water came out clear; afterward it was sensibly tinged with brown, and gave an appreciable reaction. After this thorough washing, the pots were kept warm close

to a stove or a *calorifere*. Next day the leaves of two *Ficus elastica* so treated ceased to droop, the spread of black spots on their leaves was arrested, and three days afterward, instead of dying, the plants had recovered their normal look of health. Very soon they made new roots, immediately followed by vigorous growth. In large towns, especially, this course of treatment is easier to carry out than a general re-potting. Perhaps the extra warmth may be as efficacious as the extra water.
—*London Society*.

VALUE OF THE EUCALYPTUS.—When freshly cut, the wood of these trees is soft, but so full is it of a resinous gum that it soon hardens, and becomes well nigh imperishable. For ships, and docks, and jetties, it is invaluable. The terrible *Teredo navalis*, or ship-worm, lets it alone. It is proof also against that fearful scourge the Termites, or white ant. Hence in India, Eucalyptus wood is used for the sleepers of the railroads, where it defies the insects and the climate. So great is the variety of the Eucalyptus, that they are provident for nearly every purpose which wood can subserve. The ship-builder, wheelwright, carpenter, coach-maker, and cabinet-makers, are supplied. Usually the Eucalypti are evergreens, and hold tenaciously to their leaves. But they readily shed their bark, as a rule, and in such immense pieces can this be detached that the natives make a rude tent of a single piece. Of many species the bark is serviceable for paper-making. For size, no trees can equal these Australian gums in the magnitude of the timber afforded. A plank sent from Victoria, and intended for the London Exhibition, but which arrived too late, sold for £100. It was a clear plank, over 223 feet long, two feet six inches

wide, and three inches thick. But though excellent timber, some of the species are of little worth for fuel. In these the wood burns with such difficulty that it is regarded as specially suited for shingles.—*Popular Science Monthly*.

LIQUID GRAFTING WAX.—A good liquid grafting wax is in demand, and we publish the following—Lefart's receipt—which has a good reputation: It was kept a secret and sold at a high price for a long time. All who have used it speak of it as being the best preparation for covering wounds in trees that has ever been discovered. Melt one pound of common rosin over a gentle fire, add one ounce of beef tallow, and stir well; cool a little and mix with it a teaspoonful of spirits of turpentine, and then add seven ounces of ninety-five per cent. alcohol. The alcohol will cool it so rapidly that it will be necessary to put it again on the fire, stirring it constantly, and with the utmost care to prevent the alcohol from getting inflamed. To avoid it, the best way is to remove it from the fire; when the rosin commences to melt, stir and repeat until the whole is a homogeneous mass, similar to honey. After a few days' exposure to the atmosphere, in a thin coat, it becomes as hard as stone, and impervious to water and air. It should be put on with a painter's brush.—*Southern Horticulturist*.

LOFTY TOMATOES.—A resident of Los Angeles, Cal., is now gathering ripe tomatoes from the top of a twenty foot ladder. The vine, which is twenty-five feet high, has been trained on the sunny side of the house, and shows blossoms and fruit in every shade of growth.

Editorial Portfolio.

OUR FRONTISPIECE.

CALIFORNIA POPPY.—(*Eschscholtzia Californica*.) Of the many beautiful native flowers that adorn the plains of California, there is none more brilliant and showy, and no more general favorite than the California Poppy. It grows in the greatest profusion. In portions of the San Joaquin Valley, during the month of April, its rich blooms cover the ground so densely as to form a continuous carpet over acres of land, intermingled with various white, yellow, blue, pink and purple flowers, and under the mid-day sun, its brilliant orange and yellow color shaded into a deeper orange in the centre of the flower cup, actually dazzles the eye.

This is particularly true of a species of our Poppy which is frequently called the Orange Flower, on account of its rich saffron color. For we must remember that there are no less than five different kinds of this member of the Poppy family in California, all of which are found in San Joaquin Valley. Of these the flowers of three are yellow; one a deep orange or saffron, and the fifth, a pure white.

We have promised that in describing our wild flowers, we shall give not only the common names, but also their botanical or systematical ones. The latter, as is well known, are so called because they reduce botany, or the study of plants, to a system, and science means nothing more than knowledge reduced to a system.

The systematic name of our Poppy is *Eschscholtzia*. "Whew!" you will say, "what an outlandish, almost unpronounceable name. Why do naturalists who ought to be men of sense, give such names to plants and animals?"

We shall try to explain. Men wish to know how many kinds of animals and plants there are in the world, and to arrange and name them in order properly, according to their different kinds; to do this, leading naturalists, like Linnæus, Cuvier, and their successors, have found it necessary to give names in that language which is most generally understood throughout the civilized world by those who enjoy the advantages of a liberal education. That language is Latin, which was spoken by the old Romans, who, as you know, once ruled the world, so that their language has become a part of the many languages of all civilized nations of modern times.

These are the reasons why every animal and plant that is known has a Latin name. Sometimes these names are given from the qualities of the plant or animal, sometimes from the name of their discoverer.

In this way our California Poppy is named after the man who first made it known to the scientific world.

It was named in honor of a Russian naturalist, who made a voyage around the world, and visited California nearly fifty years ago, with the celebrated Kotzebue, the Russian navigator. This was Dr. Eschscholtz, and as he first made the plant known to the naturalists in Europe, it was called *Eschscholtzia*, which simply means Dr. Eschscholtz's plant. It is pronounced as if spelled Es-koltz-e-a accented on the second syllable. But as there are several kinds of this plant, which differ in size and color, another Latin word is added to distinguish them.

The kind which was first discovered was called *Eschscholtzia Californica*, that is, California Poppy. It is the largest kind, sometimes attaining a height of between two and three feet,

and has yellowish-orange flowers. One variety of this species has pure white flowers, and may be called *Eschscholtzia Californica corolla alba*, which being interpreted merely means the white-flowered California Poppy.

The pure orange colored species, which is the most common on our lighter soils, is named *Eschscholtzia crocea*, or Crocus Poppy, so called because the flower is cup-shaped, and of a deep orange color like the Crocus. It generally grows from a foot to eighteen inches high. Two small kinds with yellow flowers are *E. compacta*, so named from its dwarfish compact form, and *E. tenuifolia*, or slender-leaved Poppy. These Poppies can be easily distinguished from our wild Tulips already described in the March number of the HORTICULTURIST. Poppies have four flower leaves, or petals, but Tulips only three. Poppies have finely divided leaves, as represented in our frontispiece, while Tulips have simple, grass-like leaves. They have but a slight odor, reminding one of a freshly cut watermelon.

Our colored engraving presents us with a life-like, or an accurate representation of the California Poppy, giving its stem, leaves, buds, flower, and seed-pod in their natural size. It is seen that the seed-pod is very differently shaped from that of the opium Poppy and its kindred species.

Fig. 2 is the pod opened when green; 3 is the same as it opens when dry; 4 is the upper part of the seed-pod, before opening; 5 is the seed magnified; 6 is a section of the same showing the germ, and 7 is the germ magnified still more. No. 8 shows how the stamens, or male organ of the flowers, are attached to the petals, and 9 is a section of an unripe seed-pod.

From March to September our Poppies are blooming and beautifying the

plains in some portions of California. In San Joaquin Valley they first bloom in March, are in all their glory in April, and disappear entirely by the first of July, when our plains are dry and sear. But the traveler sees them in full bloom along the Central Pacific Railroad, in Livermore Valley, and to the westward, until late in September.

MAMMOTH GRAPE VINES.

We have had a gigantic vine—the Mission Grape at Santa Barbara, of immense proportions, which, having become nearly dead from some cause, was sent to the Centennial at Philadelphia. There is also another of very large size in or about the same vicinity, but much younger. All the world, at least all that part of the gardening world which inhabits Great Britain, has heard of the wonderful vine at Hampton Court near London. To account for the immense crops of grapes borne by this vine, and for its vigorous old age, it has been stated that its roots are in an ancient sewer, where they find abundance of the rich materials, out of which the vine prepares sugar and acid, and color and fragrance, and all that gives deliciousness to its fruit. In 1837 it was reported to have borne 800 lbs of fruit, upon a roof consisting of 2,304 square feet. This vine is the Black Hamburg. But within a few miles of it may be found one yet more striking. This is at Cumberland Lodge, near Windsor. This monster, loaded with 2,000 large bunches of grapes, as black and nearly as large as Damsons, must surely have had some leviathan “practical” to cook his border. Some 75 years ago it was found in a small cucumber pit. The plant seemed to like its situation, for it soon outgrew this limited abode. It became necessary to

extend the shelter; and this has been twice done, until the pit is 138 feet long and 16 feet wide. Incredible as it may appear, the stem of this vine in 1830 measured 3 feet 9 inches in circumference. The foliage was vigorous and green. The size of the branches were nearly uniform. The roots of this vine were not in a sewer or any such place, but in ordinary garden ground, resting on a coarse, hard gravelly clay, covered about the same space as its celebrated rival at Hampton Court, and bears twice as many grapes, of the highest excellence. Surely we have in this a striking example of the folly of spending much money in preparing vast borders out of costly materials, of which the vine has no real need. No doubt the vine border at Cumberland Lodge was prepared originally from good materials. But for this a small quantity of material was sufficient; and once established in soil that it likes, the vine needs little further care. Its chief desire is to have a warm, light, rather dry, somewhat shallow border, and that is precisely what it got at Cumberland Lodge. The Santa Barbara vine needed to be near a stream of water in the dry summer of Southern California.

PUBLICATIONS RECEIVED.

Vick's Illustrated Monthly Magazine for May, Rochester, N. Y. This highly useful, interesting and beautifully illustrated work is replete, as usual, with valuable information on many subjects in horticulture, and of course on its specialty—flowers. First there is a capital paper on exhibition of flowers with embellishments of a floral tent, stands, etc. Then there are articles on Celery growing; the Celosia with a splendid colored picture of superb Feathered Celosia as a frontispiece; the utility of Soot; Perennial Sensitive

Plant; a Prairie Garden; the Treatment of Primulas; Cultivation of Wild Flowers; Flower culture in Iowa; Perennial White Pea; The Catalpa Destruction of Plant Insects; Notes on the Hyacinth; Potato Notes; Cultivation of Palms; Children's Flower Shows; Cottagers' Shows; Flower Gardening in Maine; Plants in Living Rooms; Ferns and Flowers of California; White Pond Lilies in California, etc., etc.

Schedule of prizes offered by the Mass. Horticultural Society, Boston, for the year 1878, kindly sent by Robert Manning, Esq., Secretary.

C. H. Harvey & Co's. Spring Catalogue of Plants, Seeds, etc., for 1878, Boston, Mass.

The Young Scientist, a popular record of scientific experiments, inventions and progress; New York, March, 1878. We quote the following excellent remarks on the benefit of substantial studies for youth:

Every day proves to us that our journal is needed, and that it is calculated to do much good. The bane of this country is the prevalence of demoralizing juvenile literature. A few months ago a case was brought before the courts in New Jersey, where it appeared that a dozen boys, having given themselves up to the reading of "pirate" stories and story papers, actually leagued together and formed a robber band, having headquarters, watchword, signs, grips, etc. Although the children of respectable parents, wanting for nothing, they stole provisions, etc., upon which they feasted in secret, holding orgies modeled after those of robber chiefs!

The way to counteract this tendency is to give the boys (and girls, too,) something to do. The children of those who are above want may dislike to

commence a *bona fide* trade; to them the *Young Scientist* will point a way to intelligent recreation and active employment. Those whose means are limited will find in our pages suggestions which will enable them to save or earn many times its cost.

Does not this subject deserve the attention of those parents who have the good of their children at heart?

We have received a very choice lot of Roses from Joseph W. Vestal, Cambridge, Indiana, for which we return our sincere thanks. Mr. Vestal puts up rare selections of different plants at reasonable prices, for transmission by mail. Send for a circular.

CULTIVATION OF FRUIT AND REPORT ON THE FRUIT AND VEGETABLE MARKET.

As the raising of new varieties of fruit from seed is one of the most important and interesting of horticultural operations, we here introduce some capital observations made by Robert Manning of Salem, Mass., the enlightened and esteemed Secretary of the Horticultural Society of Massachusetts at Boston. He observes: "In the whole range of horticultural operations, there is nothing more attractive than the originating of new varieties of fruit. To those who are familiar with it, there appears nothing strange in the fact that the varieties of fruits, with few exceptions, do not, like our common vegetables, reproduce themselves from seed; but to the beginner nothing is more surprising than to be told that if he sows the seed of Apples, Pears, Strawberries, etc., each seed will produce a new variety. Some indeed may so closely resemble their parent or parents (for very likely, if not artificially hybridized, they will be accidentally) as to constitute distinct varieties. In such a

fruit as the Strawberry, it would seem at first thought almost impossible that there could be room for so many varieties; but the resources of nature are inexhaustible, and somewhere in plant or fruit, in leaf or habit, in size, shape, color, flavor, hardness, or season of ripening, or in various combinations of these, we find individuality asserted.

Formerly it was believed, that if we sowed the seeds of the best varieties of fruits, they would return to the wild type; but this error is now dispelled, and it is found, that, of seedlings from the best varieties, a large number will possess many valuable qualities, with some, perhaps, of superior excellence. Such was the case in Mr. Dana's experiment, where seeds of the Seckel, Bartlett, Beurre Diel, and others of the finest pears, produced that superlative variety, the Dana's Hovey, (probably from the Seckel,) besides the Excelsior, America, and other fine sorts.

Without viewing the steps by which our fruits have been gradually ameliorated in the course of centuries, let us consider for a moment the marvelous improvements which have been effected in our day. Take for instance, the Hovey's Seedling Strawberry, which we may almost call an infinite advance over any that preceded it. Consider the wonderful improvement which has been effected in the Potato, as if by magic, within a few years, and the numberless varieties of Grapes of the highest quality which have supplanted the two or three sorts cultivated only a few years since. Now, we can not think we have, with all these improvements, reached the limit of progress, if indeed, there be a limit. The Clapp's favorite is in size and beauty undoubtedly superior to any other of its season; but who will give us a new variety equal to it in size and flavor and beauty, and still earlier.

The President Wilder Strawberry, I do not hesitate to pronounce, after three years' acquaintance with it, and a very careful examination of the beds during the last two years, superior to any other strawberry; but who will give us another President Wilder as good as the first, and as early as Jenny Lind?

And so we might go on specifying the points in which improvement is desirable; and we can not doubt that not only are all these destined to be supplied, but that nature has in store for us new fruits possessing characteristics of excellence now undreamed of; and the new creations, as we may call them, continually opened to our view, lend fascination to this pursuit beyond that of any other branch of cultivation.

It is not necessary to have a large extent of ground in order to raise new seedling varieties. Mr. Dana's Pears were all gained in a small and crowded garden; and the fine Raspberries and other fruits originated by the late Dr. Brinckle were grown in the still smaller limits of a city lot. I have said nothing of the pecuniary rewards which await the originator of a new fruit superior to any of its kind, for they are well understood; but the true lover of horticulture will find an ample recompense for all his pains in tracing out the different modifications and sports of his seedlings. One thing should on no account be omitted, viz: a careful record of all the seeds sown; for it is by comparison of such data that we must, if we can not attain to a full knowledge of the laws which govern the production of new varieties, at least gain some insight into them.

As to our report on the markets, at the beginning of last month (May), Fruits and Vegetables commenced to appear in greater variety and at lower prices. About the middle of May the

stalls began to become bare of California Oranges, Lemons, Limes, etc. Previously to that, two cargoes of Tahitian Oranges had been bought up, and they were in daily expectation of three more cargoes of Oranges from the Society Islands. Strawberries came in in abundance and were of good size, though not by any means as large as either the Longworth Prolific or British Queen are susceptible of being raised by careful cultivation. The British Queen is the better flavored of the two sorts, with less acidity, and appears to be coming somewhat more into favor with cultivators this year than hitherto. Cherries were increasing in the market, but they only became quite plentiful the last of May. The cheerful and vivifying rays of the sun, deferred so late this spring, were fast maturing Strawberries, Apricots, Peaches, Cherries, etc., and promise generally throughout the country an abundance of those, as well as other fruits, and plenty of work for the canneries, and drying apparatus. About the middle of May the price of Strawberries was \$6 to \$9 per chest, and those of medium to first rate quality 10 to 20 cts per basket. Gooseberries, 7c. to 8c. per lb.; Oranges—Cal., \$27.50 to \$45 per M. Lemons—Sicily, \$12 per box; Los Angeles, 2c. to 3½c. Limes—Los Angeles, \$5 to \$8 per box. Bananas, \$3 to \$6 per bunch. Pineapples, \$8 per doz. Cocoanuts, \$4 to \$5 per 100. Dried Fruit—Apples, 5½c. to 7½c. per lb.; Peaches, 8c. to 9c. per lb.; Pears, 4c. to 8c. per lb.; Plums, 3c. to 4c. per lb.; pitted, 14c. to 16c. per lb.; Prunes, 14c. to 16c. per lb.; Figs, White, 6c. to 8c. per lb.; Black, 4c. to 7c. per lb.; California Raisins, \$1 to \$2.50 per box. Vegetables—Cabbage, \$6 to \$8 per 100 lbs.; Cucumbers, 50c. per doz.; Asparagus, 50c. to 75c. per box; Tomatoes, 15c. per lb.;

Rhubarb, $3\frac{1}{2}$ c. to $4\frac{1}{2}$ c. per lb.; Green Peas, $1\frac{1}{2}$ c. to 2c. per lb.; String Beans, 20c. per lb.; Chili Peppers, $12\frac{1}{2}$ c. per lb.; Garlic, $1\frac{1}{2}$ c. to 2c. per lb.; Okra, 15c. to 20c. per lb.

About the 25th of last month (May,) the market was well supplied with Strawberries, Cherries, Green Gooseberries, and a small quantity of Raspberries. We observe a much greater abundance of the British Queen Strawberry this season than last. It is of duller color than the Prolific, but is generally much larger and of a stronger Strawberry flavor with but little acidity compared with the Prolific. Strawberries about the latter part of May were in their prime in quality, and of course moderate in price, indeed the smaller sized ones were only 40 cents a box of about 5 pounds. Tahiti Oranges arrived in good quantity. The season has been a little backward this year. Oranges were rather scarce about the last of May.

As to vegetables—Asparagus, Green Peas, Rhubarb, etc., were plentiful and cheap; but new crop Potatoes continued very scarce and high. California Raisins continued to be plentiful, but the quality is too variable to give reliable quotations. Upon the whole our fruit season is quite favorable, and there will be an immense supply for canners. A fine rain on the 21st of May was very favorable for both the fruit and vegetable gardens.

The first Raspberries of the season arrived on the 13th of last month (May,) and sold at 60 cents per pound. About the last of that month there were seen in market a small lot of the English Black Mulberry. They appeared of rather diminutive size. Currants and Gooseberries (the small native Houghton) were becoming plentiful. Strawberries were about at their height.

Raspberries were becoming plentiful at 10 cents per small basket containing about two-thirds of a quart.

PEEN-TO, OR FLAT PEACH OF CHINA.

The size of this Peach is two inches in diameter. Shape, irregularly round, very much flattened; one inch and a half through on one side, and one inch on the other; suture or furrow very deep, extending from the stem around thinnest side to the calyx; calycinal cavity narrow and deep; skin greenish yellow, washed and delicately penciled carmine, peels readily at maturity; flesh very finely grained, juicy and dissolving, with a delicate almond aroma; quality best; clingstone; stone very flat, 5-8 inch thick; flowers large, glands reniform; maturity, May 24th to end of June, in Florida.

(Note.—The original tree originated by P. I. Berekman, Augusta, Ga., from pits received from Australia in 1869; but from its habit of blooming in January, is unsuitable to open air culture in the middle section of the State. Trees sent to Florida have fruited abundantly and prove to be adapted to the sub-tropical zone, where varieties of the Persian or common strain, as cultivated throughout the United States, are worthless. In Gainesville, Florida, this variety ripened May 24th, 1877, the growing season being thirty days later than ever known before. The supposition is that its maturity there would be in ordinary seasons about May 1st. In Pensacola, a three-years-old tree produced 1,200 specimens.)—*Proceedings of the American Pomological Society, 1877, Report on Native Fruits.*

This Peach would probably be well worth a trial in Southern California, if it be not already there.

NATURAL HISTORY.

No pastime seems to be more pregnant with pleasure, at once instructive, and calculated to wean the mind from bodily cares, than the study of natural history. The field is so extensive as to secure from almost everybody whether healthy or an invalid, male and female, learned or unlearned, admiration of some one branch, while the study is accessible to both rich and poor.

To some, the search for minerals and fossils among the rocky steepes of the mountains or sea-watered shore has attractions; to others, collections of birds, reptiles or insects. Some are great admirers of flowers, whether wild or domestic, the gathering of ferns, mosses or colored leaves. Often the taste for sea-weeds, coralires, zoophytes, carries the naturalist amateur along the bay or ocean shores. Thus by having an object in view, the healthy person as well as the patient or convalescent, may benefit immeasurably by open-air exercise, where the rambles without an object might only produce melancholy thoughts, both unpleasant and injurious.

We recommend the study of nature to those where full vigor of mind and body has been impaired; and let no one think slightly of any pursuit, which, not put in the place of the highest realities of true religion, but used as an auxiliary to them, has such capabilities of both preserving and restoring tone to the mind, and vigor to the system. Gardening too, is an occupation most beneficial to the health of mind and body.

WORK FOR BOTANISTS.—W. B. Hensley, who is high authority in such matters, says there is an immense unexplored field for investigation in Cen-

tral Africa, as well as in South America. He estimates the number of species of flowering plants and ferns within the tropics as high as 40,000, and possibly 50,000. Recent explorations in Borneo have resulted in a rich booty of new species, and he states that little is known of the flora of tropical Africa beyond the coast regions.

THE water for garden plants should not be very cold; rain water is the best, and it may always be obtained by having a hogshead standing in some place out of sight, under a spout connected with the roof.

A garden should not be shaded by large trees, since but few plants flourish under shade and drip, while the strong roots of trees often usurp all the soil, and appropriate to themselves all the best of the garden.

METEOROLOGICAL RECORD.

FOR THE MONTH ENDING MAY 31st, 1878.

(Prepared for THE HORTICULTURIST by THOS. TENNENT, Mathematical Instrument and Chronometer-maker, No. 18 Market Street.)

BAROMETER.

Mean height at 9 A. M.	30.04 in.
do 12 M.	30.04
do 3 P. M.	30.04
do 6 P. M.	30.03
Highest point on the 23d at 9 A. M.	30.17
Lowest point on the 20th at 6 P. M.	29.80

THERMOMETER.

(With north exposure and free from reflected heat.)	
Mean height at 9 A. M.	62°
do 12 M.	67°
do 3 P. M.	66°
do 6 P. M.	60°
Highest point on the 24th at 1 P. M.	82°
Lowest point on the 20th at 6 P. M.	56°

SELF-REGISTERING THERMOMETER.

Mean height during the night	49°
Highest point at sunrise on the 15th	53°
Lowest point at sunrise on the 11th	45°

WINDS.

South-west on 14 days; west on 17 days.

WEATHER.

Clear on 19 days; cloudy on 4 days; variable on 8 days.

RAIN GAUGE.

	Inches.
20th	0.10
30th	0.02
Total	0.12
Previously reported	3.99
Total for the season	31.11



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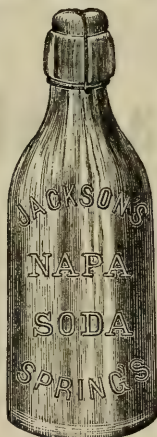
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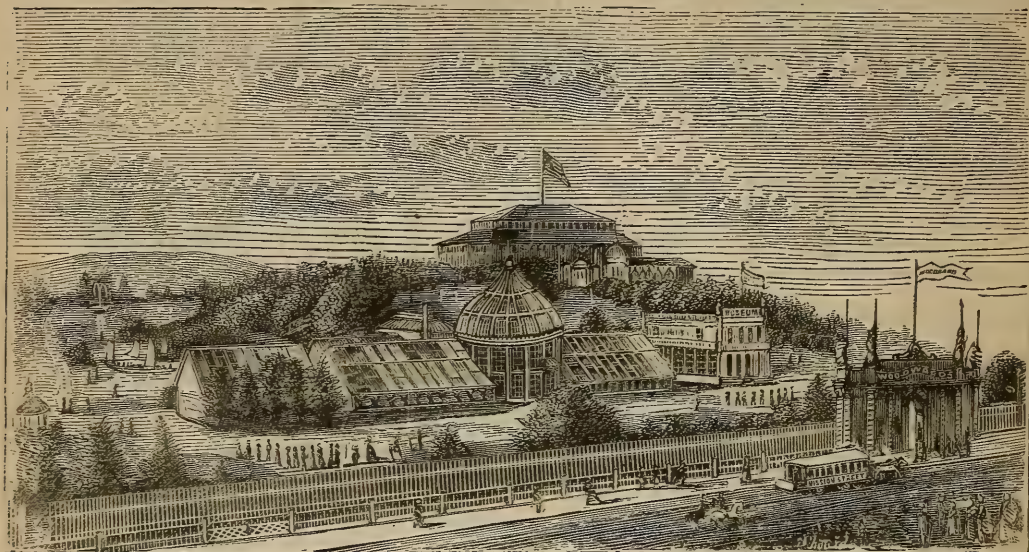
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(*Prichardia Fillifera.*)

THE

California Horticulturist

AND FLORAL MAGAZINE.

VOL. VIII.

SAN FRANCISCO, JULY, 1878.

No. 7.

GARDEN NOTES FOR JULY.

BY CHARLES H. SHINN.

In Alameda county, this month is the time of fullest blossom, and richest reward. We miss a little of the garden's earlier freshness, and some of the spring beauties are gone, still, for variety, richness of color, and abundance, this month is green.

Without the proper use of water, however, the July garden is only a waste of curling leaves and withering flowers. Some of our good friends sprinkle with a fine hose, over the bushes, and so waste an immense deal of water to very slight results. Sprinkling is well enough for long established grass-plats, or for beds in a lighter, sandy soil like that of Oakland. But continued experiments have convinced me that the best system with beds of flowers, or with single specimens on the lawn, is to lay the hose down, and fill the bed full, letting the water soak out of sight. Fill up again, and repeat the process until the earth is full of water. Wait until the surface is beginning to dry, then stir it with a light hoe. No more watering will be needed for several weeks, the ground

will remain loose and moist, and the growth of the plants will be beyond precedent.

Plants do not need such a dreadful amount of water, if only none of it is wasted. The use of a suitable mulching material will be found advisable, even when water is abundant. A good mulch should allow water to pass through, should retain moisture, and ward off the heat of the sun; it ought not to be an eyesore, and continual litter. So let us see what can be used.

In loamy or clay soils we may have an inch or two of coarse sand put on the surface of the bed in spring, after the plants have been set. Almost all our native hillside flowers do better when their roots are kept cool by a little mound of gravel around the plant. Sand used on the surface of heavy soils can be dug in each winter, and more put on, until a decided improvement has been made.

In light soils the use of well rotted straw, or old stable manure, or leaf-mould, will be found of the greatest use. If we can form a covering which holds moisture well, and keeps the heat from penetrating deeply, we shall save much of our irrigation.

By this time the early bulbs, crocus, ranunculus, anemone, etc., have been dug, and put in boxes of dry sand, far removed from the prying teeth of "rats and mice, and such small deer." Something was of course ready to fill the empty beds; the crocuses were followed by Double Portulacacas, which are just beginning to bloom; foliage plants, Coleus, etc., followed the Anemones; some Sweet Williams, Asters, and Everlastings went into other vacant corners.

Transplanting can be done as well now as at any other time, if the plant is shaded for a few days. Potted plants turn out at any time, if the ground is wet.

This is the month for watching your flowers to see which are worth keeping. Destroy inferior seedlings. Mark the best for seed. Save seed from the largest and most thrifty plants, and from the best pods only, never using those at the end of the spike. Save more seed than you want yourself, so as to have some to give away.

Go over the garden, too, if you have leisure, and trim off the decayed and withered flowers and leaves. Tie up the leaning stems of Gladiolus, for these when swaying in the wind, not only look badly, but also injure the bulb. Cut Pansies back once or twice during the summer. This gives them a rest, and enables them to bloom again with the first rains, and all winter. Pansies need a partial shade, and a moist atmosphere to bloom well in summer here. Frequent spraying of the leaves and mulching of the roots is needed.

The Antirrhinum, or Snapdragon, is much neglected. Now and then a few of the common varieties are seen, but few amateurs realize the beauty of a mass of seedlings grown from the best

imported seed. The selfs range from pure white through yellow, orange, pink, rose, crimson and scarlet, to purple. Then there are mottled, flaked and tipped ones, in all imaginable combinations. For genuine show you will find these unsurpassed—unless the cat-erpillars come in. Some years the gardens are full of these fuzzy enemies, and they admire Snapdragons greatly.

It is a good thing to try some annuals every year, and to choose some which you have not grown before, although possibly long conversant with its appearance. *Asperula setosa*, a small plant, with light blue, sweet scented clusters of tubular flowers; *Alonsoa grandiflora*, a fine bedder, with bright scarlet, curiously crimped flowers; *Tropaeolum Lobbianum*, a species of *Nasturtium*, with more delicate leaves and richer colors than the common kind—these, and others, were first tried this year, and all have done well.

To get the full benefit of a garden you must give away the surplus blossoms—those that would otherwise fade and run to seed. The most graceful gift of gifts is a basket of flowers, with its swift, evanescent beauty, and its tender appeal.

GENERAL MANAGEMENT OF AQUATIC PLANTS.

BY FLORIST.

(Concluded.)

N. Stellata seeds freely, but does not propagate very readily at the root; it is therefore better to treat it as an annual. When the seeds vegetate, they should be transplanted into separate pots, for one plant is quite sufficient for a small pot, which it will soon fill with roots, and require to be planted out in the cistern or aquarium to expand its ramifications, and gain strength enough to

produce beautiful flowers. As the foliage of most aquatics floats on the surface of the water, and presents a broad horizontal surface, it becomes necessary to water them, both to remove the dust and filth which will be deposited upon them, and also to refresh them, like other plants.

Euryale, of which there is only one species, is, strictly speaking, only an annual plant; its seeds should be sown as procured, whether by importation or by its culture at home; for few aquatic plants will vegetate if their seeds are long kept out of the water. The *Nelumbium* is probably the only exception. The seeds of *Euryale* should be sown in rich, loamy soil, and plunged about two inches under the surface of the water in the pond; when the plants have vegetated, they should be separated, and planted singly into pots, to be afterwards planted out in the cistern or the aquarium, or in a large tub or pan plunged in the tan bed of a plant stove, but placed as near the light as possible. *Nelumbium* is easily raised from seed, which retains its vegetative powers for forty years, and with every advantage in such a fine climate as that of California, will produce blossoms the first summer. It is generally grown in large tubs, with a few inches depth of water over the surface of the mould, placed in the tan bed of the stove. By these means a fine plant may be raised in one year, and will throw up several flower buds, which may not come to perfection unless the seeds are sown as early as December or January in this locality. The leaves are nearly two feet in diameter. The tub should be allowed to remain in the tan, and become nearly dry, giving it no more water than other plants around it.

Cyperus Papyrus, or *Papyrus Antiquorum*.—This plant is less ornamental

in its flowering than any of the plants above treated of; it is also of much easier culture, requiring only to be planted in a cistern, deep pan, or tub, kept moist, and is readily increased by separation at the roots.

Oryza Sativa is more a plant of curiosity than of beauty. Its seeds should be sown immediately after they are ripe, and immersed in water, for they soon lose their vegetative properties if left exposed to the air.

All the aquatic plants we have treated of, with the exception of the *Cyperus papyrus*, which attains to a great height may be and are cultivated successfully in pits and frames heated by manure linings. The whole tribe of aquatic plants seem to prefer a moderately close, moist heat, such as that produced from fermentable matter, and to be placed near the light, which is more readily effected in pits or frames than in houses generally, though the mild climate of our coast favors them much.

The *Papyrus antiquorum* is a plant of great antiquity, and afforded the very material from which the ancient Egyptians made paper, "which was obtained from the pellicle found between the flesh and bark of the thick part of the stalk, ribbons of which were united till the size required, and were then pressed and dried in the sun."

LANDSCAPE GARDENING.

BY HORTICULTURIST.

The art of composition embraced in landscape gardening has certain principles which go towards forming a unity of the whole, and from which no deviation can be made without marring the result. Taste may be possessed in a greater or less degree, but without reference to principles it will fail to create a design of harmonious propor-

tion or association. It is to be regretted that so little attention is given to the subject of principle and arrangement of tree, shrub, flowers and path, as a whole in the decoration of our homes. Thousands on thousands of dollars are yearly expended in the creation of new places that have to be again remodeled because of apparent want, when completed, of congeniality and harmony necessary to an effective whole.

It is not expected that every man will or can be a landscapist, any more than he can be a lawyer or a physician; but he should have sufficient love for his own home to induce him to study the principles of the art, so as to be able to appreciate the reasons for arrangements of designs submitted by a landscape artist. A spirit of independence, a pride and love for the creation of one's own, should imbue every citizen to the improvement by judicious planting of his home grounds. Were this the condition of things, the rapidity and beauty of new home surroundings would be greatly enhanced, and many grounds that now receive frequent remodeling would exhibit most gratifying results within a period of five or six years from first planting.

It may be pleasant to pass through an apprenticeship of learning by practice the character of tree and plant, the requisite breadth of lawn or road to give the best effect, or to arrange them in one harmonious whole, but it consumes years of time, and is a knowledge which may be bought and made applicable whenever the purchaser has his ground ready for his practice. These remarks are made as cautionary against one of the most common errors in ornamental gardening, viz: That of mixing herbaceous flowers with shrubs and trees, by which neither can thrive properly; or if they do the effect of one is injured by

that of the other. However pleasing and picturesque it may be to see trees, shrubs, and flowers all striving together for the mastery in a natural wood, yet this sort of beauty is totally unsuited to scenes of art; and however much the owner may desire to see and study every tree, shrub and flower, it is better to plant the surplus in a reserve border in some part of the rear garden than to destroy unity and effect by a crowding of varieties incongruously together. Another error common to small gardens is the want of some leading feature of special interest, such as the creating of a flower-garden proper, a fountain, or rockery; the two last named are the most difficult, and require a tasteful, experienced landscape artist to execute them so that they remain permanent and beautiful ornaments, harmonizing with the surrounding grounds. The flower garden proper, as well as the floral beds, are readily constructed and within the power of all. More or less of these should be placed near the house so that more or less views from the windows of the house will look down upon them. Various patterns for the arrangement of the beds and paths are found in all works of gardening, but in copying them thought should be taken as to their adoption to the position or form of boundary in which they are to be placed.

Within a few years the popular taste has been largely turned to the introduction of drooping trees as objects of graceful beauty, harmonizing with the smoothness and verdure of a lawn, or the high keeping and neatness of a pleasure garden. Drooping trees, like water fountains, are dangerous in the hands of those who attempt their use in the decoration of grounds, without possessing a considerable knowledge and good taste in the composition of a

landscape. Gracefulness and elegance being the prominent characteristics of drooping trees, they are shown to the best advantage either singly or in wide, yet artful groups, on lawns or borders; where symmetrical art, rather than the natural picturesque is sought to be embodied as the leading feature, where bold expression is desired, they are entirely unfitted. Placed on the borders of groups, at sufficient distance to enable them to exhibit their peculiar habits and develop freely their forms, many of the drooping trees may be used effectively, provided the group of which they form a part is composed with similar pensile, although not so distinct in habits of foliage or spray as exhibited in the American elm, black birch, or wild cherry. For planting on the borders of ponds, or streams of running water, or as symbols of sympathy between the living and the dead in cemeteries, they are all valuable; and with judicious knowledge of their expansion in growth to arrange them on lots or in positions suitable to their future lives, they can not be too much used.

THE FRUIT MARKETS.

SOURCE OF SUPPLY—VARIETIES—PRICES—GRAPE CULTURE, ETC.

Spring has come, bringing with it the pride of California and the envy of other States—the early fruits and vegetables. The general evenness of our climate, and the absence of sudden extreme changes in the weather, enable us to produce fruits and vegetables much earlier, and of a more perfected size, than any other State in the Union. Within our borders we have almost every variety of fruit known, from the banana, persimmon and pine-apple of the tropical zones, to the hardy apple,

peach or pear of the northern climates. San Francisco is better supplied to-day with the different varieties of fruits than any other city in the world.

Apples.—Of the many kinds of fruits that we have, the apple is the poorest. In quality and flavor they are much inferior to the Eastern apples, yet the demand is large and the supply almost inexhaustible. The best apples come from Oregon and the northern counties of this State. We also receive large varieties, including the Pippin, Bell-flower, Spitzbergen and Russet, from Alameda, San Jose, Petaluma and Watsonville. There are at least 100 different varieties, and many grow to an enormous size; but they lose the flavor of the real apple when they grow so large, and they are then used principally for cooking purposes. Perhaps it is in the climate or the soil, or in both, but we have never yet been able to produce apples that can compare favorably with the delicious Eastern pippin. Apples begin to come into market about the first of June, and continue until the latter part of February. They vary in price, according to size and quality, from 75 cents to \$3 a box of 40 or 45 pounds.

Pears.—We have about 100 different varieties of pears, but only two or three of them are fit for the table. They are produced all over the State, but our supply is derived principally from Marin, Alameda, Sonoma, San Mateo, and Santa Clara counties. Their season is from July to January. The best eating pears are the Bartlett and Seckel; these kinds demand a good price, and are sold from \$1 50 to \$4 a box.

Peaches.—The demand for peaches is very large, and the supply is proportionate to the demand. In Sonoma and Santa Clara counties they grow to an enormous size, and, unlike other Cali-

fornia fruits that grow so large, they do not lose their flavor, but are always juicy and delicious. Their season is short. They begin to arrive about the middle of June and continue until November. They sell for from 25 cents to \$1 a basket of 10 to 15 pounds.

Strawberries.—We have a larger demand for strawberries than for any other fruit. They are produced principally in the valleys and the gardens near the city, but large quantities are shipped here from all over the State. The first crop arrived about the middle of March, and they continue to be dear until the 1st of June, when they can be bought for 4 or 5 cents a pound. They last generally until the latter part of December.

Raspberries.—One of the best fruits we produce here are the raspberries. They have a delicate and delicious flavor, and always command a good price. The supply has not been large heretofore, but this year, no doubt, we will receive large quantities. They sell from 10 cents to 50 cents a pound.

Currants and Gooseberries.—The supply of currants and gooseberries is not large, and they are not much in favor as a table fruit. They are grown principally in San Lorenzo and vicinity, whence we get our principal supply. Their season is from June until November, when they can be bought for from five to twenty cents a pound.

Cherries.— Marysville, Vacaville, along the Sacramento river, Alameda, San Jose, San Leandro and San Lorenzo, are the places whence we derive our supply of cherries. The supply is very large, but the best quality, the Black Tartarian, is scarce. This quality is in market from the 1st of March until the latter part of September, and they bring from one dollar a pound, for the first shipment, to twenty cents a pound

during the season. The other qualities vary in price from five to twelve cents a pound.

Oranges.—Our supply of Oranges is obtained principally from Los Angeles and vicinity, whence we get nearly all our tropical fruits. We also get shipments from Tahiti and Mexico, but these are gradually diminishing, as the farmers in the southern countries are now beginning to produce this class of fruit in large quantities. Last year a good many boxes of oranges were shipped to New York, and sold there at a good profit. We will soon have the monopoly of that trade, as each year the supply increases. Those imported from Tahiti bring \$20 a thousand for the first shipments, but they gradually fall to \$15, at which price they remain throughout the season. Los Angeles oranges are often retailed on the streets here for fifteen cents a dozen.

Limes and Lemons.—From Los Angeles we also obtain Limes and Lemons, but in very small quantities. We obtain our supply principally from Sicily and Mentone. Our annual imports average from 3,000 to 4,000 boxes, each containing from 200 to 250. They sell from \$7 to \$12 a box. Those produced in our southern countries bring from \$10 to \$25 a thousand.

Pine-apples and Bananas.—Pine-apples are scarce here, being obtained from Mexico and the Central American ports. Some have been grown in the southern part of the State, but their production is not very profitable. Bananas have been produced successfully in the vicinity of San Buenaventura and further south, but we obtain them principally from Mexico.

Sonoma has been the chief grape producing county, but within the last three years vineyards have been set out in nearly every county in the State. All

the hilly land, which has been difficult to use for grain purposes, is being used for grapes. Delicious wine is made in Sonoma county, also in San Mateo, and large shipments have been made to New York. The grape season commences in June and ends in December. The leading varieties are the Muscat, Alexandria, Tokay, Black Hamburg, Isabella, and Mission. The consumption averages 30,000 pounds a week. The prices range from one cent to thirty cents a pound.—*Alta*.

THINNING AND DIGGING.

With amateurs, and in many cases with professional gardeners, it is usual to plant the shrubbery borders very close. In most cases no harm, but much good comes of thick planting, if timely thinning is practiced. As soon as it becomes apparent that they begin to crowd each other, some of the plants must be removed. This is imperative and, in so removing, the especial welfare of the plants left rather than the good of those removed, should be carefully studied. The reverse of this is the usual practice with quite all gardeners, the thinnings must be cared for and made to grow at all hazards, and without regard to the loss of roots to the remaining plants.

These remaining shrubs, as is too often the case, instead of being improved by the thinning as intended, date their decline from that time forth.

The reasons for this, (and there are several), should be apparent to any observer. In the first place, plants growing closely together naturally protect each other; it follows that after a free thinning, the plants left get chilled, arresting growth and impairing their constitution. This is the result of the thinning being carried to an excess; a

little at a time is the only safe rule, and one which should never be forgotten for a moment while at work in the shrubbery.

Will it be necessary to speak of the second reason for the decline of thinned shrubs? It is the wholesale loss of roots. In our endeavor to get a good ball of roots for the removal of plants, we can not help doing considerable damage to the roots of those left. Does it pay to try and save the thinnings? Most certainly not, when it has to be done at the risk of destroying the remaining plants.

Another great wrong is done to the shrubbery by the semi-annual digging practiced by two-thirds of the gardeners. Hardly have the roots made a fair start in the surface soil, when down must go the spade and cut them off. What is the use of manuring and mulching, if we must cut the roots off every fall and spring, as soon as they get a fair start to work. I do not say the weeds must be allowed to roam and flourish. The surface should be kept clean by hoeing the weeds when small, and the crust should be kept from baking by the judicious use of the rake, but no spade should touch the ground between the shrubs. If necessary to loosen the soil, do it once a year with a strong garden fork. Much injury is also done to our shrubbery by improper pruning and trimming, but of this time and space will not allow me to speak. It is a wonder how some plants have ever thrived, subject to the cruel and barbarous treatment that has been given them. Study the welfare of your plants if you would succeed.

El Dorado, Cal. W. C. L. DREW.

THE hop fields south of Healdsburg, Sonoma county, are looking well and a large crop is expected.

CALIFORNIA DICENTRA.

BY W. C. L. DREW, EL DORADO, CAL.

In my botanical researches in California, I have found few flowers which were discovered with as much pleasure as our various *Dicentra*.

I well recollect the first time I found the variety known as *D. formosa*. At that time I did not know we were so highly favored as to have any member of the family within our borders. It was in a little grassy vale. When I saw it, so much did it resemble *D. spectabilis*, that I thought it was a stray plant of that well known Chinese variety, the Bleeding Heart of our gardens. On a slight examination, however, I soon saw my error; but so highly pleased was I with it, that I dug it and removed it to my garden.

The *Dicentra* belongs to the Natural Order Fumariaceæ. In California we have three varieties that I am acquainted with.

Dicentra formosa in the Sierra Nevada, at an altitude of 6,000 to 8,000 feet, is found in grassy vales near streams of water. It grows from one to two feet high. The flowers are borne on a compound racemose scape, from which they hang pendent. The flowers are of a rosy purple color; the centre is a bright cream color, thus forming one of the grandest combinations among flowers.

Dicentra uniflora is found in the northern part of the State, high up on mountain sides. It is a dwarf-growing variety, never exceeding six inches in height. The flowers are borne on a simple racemose scape. They are delicate flesh color throughout.

Dicentra chrysantha is the most robust and vigorous of our native varie-

ties; often growing four or five feet high. The leaves are immense, often fifteen inches long. The flowers are borne on long racemes, from which often branch out shorter scapes. The flowers are large, one-half to one inch in length being the average size. They are of the most brilliant yellow color, and when the sun shines, they sparkle and glisten as though freshly varnished. This variety, while it lacks much of the graceful habit of the other varieties, surpasses them in brilliancy and show. In their natural haunts they grow in a moderate light soil, in the vicinity of running streams. In cultivating them it will be best to plant in similar places, if possible. The finest flowers I have always found on plants growing in the shade of trees.

SOLID WALKS.—In forming garden walks, much depends on the character of the materials. Round and clean pebbles, worn by water, will always remain loose at the surface. Gravel that is somewhat angular, with a small admixture of clay, will become hard and compact. Judgment and experience are required in determining the proportions of clay to add to clear, smooth gravel; for if in too large a quantity, it will do more harm than good. The coarser material should be placed at the bottom; the smaller at the top. The surface gravel should be passed through a sieve with half-inch meshes. An experienced gardener informs us that he saves much labor by the use of salt, which is applied after a rain, when the weather promises to be fair for some days, nearly whitening the surface, and allowing it gradually to dissolve by the moisture of the walk and by dews. It makes the walk compact, and prevents the growth of weeds.



Rod and Gun.

THE OHIO RIVER, OR "LA BELLE RIVIERE."

It is now many years since we were intimately acquainted with this lovely stream. Long ago we navigated it in several different ways. Once in a large flat-boat from Cincinnati to Cairo, where it flows into the Mississippi; and from thence we voyaged to New Orleans. Several times we had small fishing flat-boats with a cabin built on top of them, and lived in them for weeks, enjoying the different kinds of angling which that river afforded. We caught channel catfish, white perch, red fins or red horse, buffalo fish, sturgeon, and Ohio salmon or pike-perch, etc. We fished numberless times in all kinds of small boats, or what were called skiffs, with rod and line from the stern, having fine sport in bringing up our piscatorial victims against the strong current. Thousands of days have we spent in this manner long time ago. The banks of the Ohio are generally precipitous, rising oftentimes into cliffs 300 feet in height, with bottom lands of the greatest fertility. The forests when we first frequented the river almost everywhere cast their shadows upon it, consisting of gigantic trees of almost every variety peculiar to the latitude, but these have been greatly cleared off, and

handsome farms, with houses and villa residences, have taken their places. The wooded islands, many of which are now finely cultivated, and which gem its bosom, are numberless. Its soft and placid scenery as you wind around its many reaches, especially in the evening when the long shadows throw themselves across its waters and its shores, is really enchanting. To attempt a description of these scenes and more practical associations, one may well give up the task in despair. We felt years ago, as we feel now, that this river, like all the magnificent rivers of our land, can only be adequately portrayed in a series of chapters, and that in a single paper the tourist must confine himself to generalities, which are likely to be unsatisfactory. But we can not resist devoting a paragraph to the Ohio.

The steamboats which ply upon this noble stream, vie, in every particular, with those of the Great Lakes and the Mississippi; and upon no river in the world can be found richer and more extensive farms, or a happier or more intelligent population. What a brotherhood of cities and towns have sprung up all along its banks! They can not, without a gazetteer, even be enumerated.

But alas! like many of our superb rivers the more poetical and peculiar characteristics of the Ohio are daily dis-

appearing before the march of mammon. For this reason it is, therefore, that when we would, in imagination, really enjoy the Ohio in its perfection, our mind reverts to those days, when it watered a comparative wilderness, and especially do we love to think of it, as it was seen and described by the great and good Audubon, who not only voyaged upon it at all seasons, but studied his delightful science of ornithology upon its banks for many years. Then it was, that in the autumn that every tree was hung with long and flowing festoons of different species of vines, their richly colored fruit mingling with the yellow, scarlet, brown and deep green leaves in such a manner as to surpass in brilliancy the gardens of the east. In floating down the stream in this skiff, the famous naturalist met with no other ripple of the water than that formed by the propulsion of his boat; and having his family with him, and an abundance of time at command, his enjoyment of the grand and beautiful scenery must have been truly exquisite. The fish that abounded in the stream, and the deer and turkeys that were killed along the shores, afforded him the best of food, and the nights that he spent by his camp-fire, in the shadow of the huge buckeye or sycamore, were indeed "grand, gloomy and peculiar." At one time the setting sun and the twilight hour, affected him with strong emotions; and the tinkling of bells told him the tired cattle were returning from their forest rambles to the settlements; and at another time the hooting of the great owl took his fancy captive and his dreams were of unvisited regions and of his future fame. Now the mellow horn fell sweetly upon his ear heralding the old fashioned keel-boat, laden with good things from New Orleans, on its slow passage up the

stream, and then the fiddle, and sounds of merriment echoed over the waters from the rude deck of a flat-boat, freighted with produce for emigrants, or a raft ornamented with rude flags and horns of the red deer and elk. At all times, his favorite study—the habits of many of the birds he has so charmingly described, were studied and recorded. Here, the lonely cabin of the squatter met his eye, giving note of coming civilization; and there, the rude encampment of Indian hunters invited him to a "pow wow." He often said afterwards, "my recollections of the beautiful Ohio are amongst the most cherished of my heart, and I would fain die upon its shore." But that great man was fated to die upon the margin of the Hudson.

THE PONDS SUITABLE FOR BLACK BASS.

Numerous inquiries are received about fish ponds, especially ponds suitable for Black Bass. As these can be raised where trout can not be, the general expectation seems to be, that Black Bass will flourish in any horse-pond that does not entirely dry up in the summer. The natural habitation of this fish is the St. Lawrence basin, where it flourishes in the large lakes, and in the streams that feed them. Its favorite places of resort are upon rocky shores, and in the rough water at the foot of water-falls. It is a large, gamey fish, and wants plenty of room, and an abundance of live bait. It is an enormous feeder, and will hold its own in a well stocked lake against all other kinds of fish. It is the only fish we know of that will clear a pond of Pickerel. It requires gravel in some part of the water in which it is planted, for breeding purposes. It makes nests like the

roach, in which to lay its eggs, and in the Northern States, spawns in May and June. If the gravel is not there as a natural deposit, it must be supplied artificially. Of course, all efforts to plant a fish of these habits in small, artificial ponds, stagnant during the summer, must be unsuccessful. A small pond of an acre or two, if fed by springs, or if a living stream, stocked with other fish, runs through it, may support a few Bass, and answer as an amusement. But to raise Bass for profit, we must have a large pond of twenty acres or more, or, in its absence, a stream large enough to furnish water-power for factories. These fish have been quite extensively transplanted in New England during the last twenty-five years, and the conditions of success are pretty well understood. They thrive almost uniformly in large ponds, and lakes at the head of streams, and when these become full of fish, they escape at the lower out-let and stock the streams below clear to tide-water. The fishing not infrequently becomes better in the lower waters of the stream, than at the pond where they were planted, especially if the pond is small, shallow, or muddy. The fish, if left free, will find the breeding grounds, and conditions of life that suit them. They do best in large bodies of water, with rocky or gravelly bottom, and are in no haste to leave such localities. One or two hundred Black Bass put into such a pond or lake, will multiply rapidly, and furnish good hook fishing perpetually after the fourth year. The earliest ponds stocked in Connecticut were, Waramang Lake, in New Preston, Long Lake, at Winsted, Pocatapang, at East Hampton, and the reservoir pond at Bolton. This last pond has stocked the Willimantic, the Shetucket, and Quinebang, below, and Black Bass

are frequently taken in the shad seines near tide-water, at Greenville. Judging from this experience of pisciculturists it is idle to plant Black Bass in small ponds of an acre or two, near the homestead. The best thing for one who is fond of the rod and fly, to do, is to unite with his neighbors of similar tastes, and stock the nearest lake or river where there is abundant room for Bass. It should not lessen their pleasure, to know that at the same time they are increasing the food supply of their neighbors.

LIFE IN GREENLAND.

Evening is the liveliest time in the Greenland hut. Then the bright lamps are burning, the kettles and pots (made of soapstone) all steaming and boiling over each lamp, the women busy chatting at their work, and half-naked children running about on the warm reindeer skins on the ledge behind them. This is the scene going on before us. The seal-hunter has just arrived home from after his day's toil on the sea, and while he is hanging up his lines, his water-proof gloves, and other paraphernalia, a piece of skin is drawn forth from beneath the ledge and spread before him. Its contents—the small dried fish called “augmagsat” or capeling—he eats in silence, weary as he is. This is only a preliminary meal, an appetizing pastime, while the more substantial things over the lamp are getting ready—and it does not take long to broil seal flesh. After the fish he takes a draught from the water-pail behind the door. The skin curtain of the lodge, hiding the mysteries of the lower regions, is once more drawn aside and the skin with the remnants, disappeared behind it, to join a host of the most heterogeneous articles. A good deal of talk-

ing in the relating line, or in the chatting, prattling, merrymaking style, is generally going on. What I remember most distinctly from my happy visits and stays in the Greenland huts are the stories and descriptions of the men relative to their sea adventures, accompanied by the most animated gestures, showing how the seal had first appeared, and then again dived down on his approaching it; how he (the hunter) in his turn had lingered behind till the animal, made incautious by ensuing silence, again rose to the surface; and now the hunter, leaning back with a graceful movement, shows how he resolutely swept across a long surge, and came within reach of his mark, took aim, and threw his harpoon and bladder float; how the wounded animal dived and again came to the surface, and so forth. In fact he paints the scene with the most lively colors, and we all listened with the most wrapt attention. My brother, who had a lively comprehension and a great talent for mimicry, had in after years in Denmark, often to act the part of the seal hunter, and it strikes me that I had myself a part in a play representing an unsuccessful whale hunt. Certainly we had many an hour of amusement in the Greenland cottages. No doubt we were very unpretending and easy to please in the extreme; but why criticise the means when the result is happiness? And happy we undoubtedly were, alike in the dark frosty days, with the moon shining down upon us at noon-time, and in the calm, delightful summertime, with its bright, sunlit nights.—*The Field*.

SCENERY NEAR SINGAPORE.

This place, a British dependency, at the entrance of the Straits of Malacca, and 100 miles north of the equator,

possesses some beautiful botanical gardens in which are firs of tropical verdure, the betel nut, fan shaped and cocoanut palm, with its fruit in clusters gracefully depending, the bread fruit tree, so ornamental as well as useful, the pomelo, with its abounding large fruit of the orange species, the red and yellow orange, limes, lemons, jack fruit and golden bananas. Shrubs with wax-like leaves are trained to run among and fasten upon wire dogs, pigs, birds, fishes, native and house boats, fans, urns, and pagodas with trimming, and an insertion of glass eyes so as to afford close imitation, and fine illustrations of tree training. Small lakes are well nigh covered with the three feet diameter leaves of the mammoth pond lily (*Victoria regia*) with the buds of the beautiful flowers just ready for opening; another has ducks of several varieties, with crested crowns, crimson wings, and velvety dress over their heads coming down to the bill that shines like ivory. A pair of jet black swans with their long necks, were sporting with ducks of no necks, while on the shore a pair of long-legged pelicans stood sleepily, the unfilled pouch hanging from beneath their long bills, the stupid fellows only regretfully moving from our pathway.

If finer drives under trees of deeper green and rich foliage over more perfect roads are to be found, it is not in circuits half going toward sundown. A pouring rain in tropical big drops came down most copiously as we ascended the gentle slope of the approach to the first cage of animals in the gardens. The monkey, who has only to be taken from his native jungle and placed under wires, was sporting as only that man-imitator can; deer of several varieties, bears, wild cats and leopards, birds of the ostrich species, with many kinds

and varieties, (large and small), of birds of plumage—notably among them one of the pheasant kind, feathers of the richest and most delicate blue, wings tipped with brown, red toes, spotted legs and topknot, so long, graceful and with feathers of such marvelously beautiful texture.

In Cathedral Park a genuine many-trunked banyan tree has principal branches with firm roots fifteen feet apart, forming with all the rest of the tropical scene something very novel and enchanting.

TWILIGHT IN THE TROPICS.

In fine weather the air appears to be somewhat more transparent near the equator than with us, and the intensity of sunlight is usually very great to the moment when the solar orb touches the horizon. As soon as it has disappeared the apparent gloom is proportionably great, but this hardly increases perceptibly during the first ten minutes. During the next ten minutes, however, it becomes rapidly darker, and at the end of about twenty-five minutes from sunset the complete darkness of night is almost reached. In the morning the changes are, perhaps, even more striking. Up to about a quarter past five o'clock the darkness is complete; but about that time a few cries of birds begin to break the silence of night, perhaps indirectly that signs of dawn are perceptible in the eastern horizon. A little later the melancholy voices of the goatsuckers are heard, varied croakings of frogs, the plaintive whistle of mountain thrushes, and strange cries of birds, or mammals peculiar to each locality. About half past five the first glimmer of light becomes perceptible; it slowly becomes lighter and then increases so rapidly that about a quarter to six it

seems full daylight. For the next quarter of an hour this changes very little in character, when suddenly the sun appears above the horizon, decking the dew-laden foliage with glittering gems, sending gleams of golden light far into the woods, and waking up all nature to life and activity. Birds chirp and flutter about, parrots scream, monkeys chatter, bees hum among the flowers, and gorgeous butterflies flutter lazily along or sit with fully expanded wings exposed to the warm and invigorating rays. The first hour of morning in the equatorial regions possesses a charm and a beauty that can never be forgotten. All nature seems refreshed and strengthened by the coolness and moisture of the past night; new leaves and buds unfold almost before the eye, and fresh shoots may often be observed to have grown many inches since the preceding day. The temperature is the most delicious conceivable. The slight chill of early dawn which was itself agreeable, is succeeded by an invigorating warmth; and the intense sunshine lights up the glorious vegetation of the tropics and realizes all that the magic art of the painter or the glowing words of the poet have pictured as their ideals of terrestrial beauty.—*Wallace's Tropical Nature.*

The Santa Barbara *Advertiser* suggests the erection of a fish curing establishment at that point.

Catfish are exceedingly plentiful at the present time in Tivola Lake, a short distance from Sacramento, and are easily taken with hook and line.

Vegetation purifies the air—first, because it absorbs carbonic acid; secondly, because under the influence of sunlight it exhales an equivalent in oxygen; and lastly, because it produces ozone.

Selected Articles.

VARIETIES OF WEEPING DECIDUOUS TREES.

European Weeping Ash.—This is one of the oldest varieties of weeping trees known. Originally it was more extensively planted than any other variety, because of its rapid growth and clear, glossy foliage. There are also of weepers the gold barked and the Lentiscas-leaved, both valuable, but in sections not quite hardy. Of course it is hardy enough for California.

Weeping Beech.—This we consider the king of all weeping trees. It is perfectly hardy, grows freely and rapidly in almost any soil, and forms one of the most graceful and picturesque, yet unique trees.

European Weeping Birch.—The cut-leaved Weeping Birch is one of the best of this variety. Among the new varieties the *Elegans pendula* and Young's New Weeping are entirely distinct, yet of the most delicate character.

Weeping Cherry.—Of this class we give preference to the dwarf weeping (*pumila*) and the ever flowering (*semperflorens*). Both require to be grafted from four to six feet high.

Weeping Cypress.—*Cupressus Glyptostrobus pendula.*—This is a beautiful weeper, and well suited to our California climate.

Weeping Elm.—Of the weeping Elms we count the Camperdown as the most persistent drooping variety. The Scotch Weeping has drooping branches but not pendulous. The cork barked is distinct, so also Hertfordshire and rough leaved. The small leaved is only of value for the reserve garden as a study.

Weeping Euonymus.—This is a variety of a shrub called the Strawberry tree or

Burning Bush. It is a novelty of value.

Weeping Honey Locust.—Hardy and with fine foliage, but we should award it a place only in the reserve grounds.

Weeping Larch.—If a tree is wanted for a rocky bank, or as a grotesque feature at some conspicuous point, nothing can equal the Weeping Larch, but for a symmetrical lawn it is not suited.

Weeping Linden.—The tree that goes under the name of the Weeping Linden is not strictly a weeper. Its foliage is whitish underneath and with age it has a half drooping habit.

Weeping Mountain Ash.—This is one of the most beautiful of weeping trees, and we believe we have no destructive borer insect here to destroy it by girdling it, as it does in the East. It is generally worked on the common Mountain Ash at six or eight feet high, and in three years its branches reach the ground, loaded with white blossoms in early spring and red berries in the autumn, and forming a lovely natural arbor or bower.

Weeping Poplar.—The variety of this weeper (*grandidentata pendula*) is well adapted to the background of a group of weepers, but it is too strong and bold except upon a large lawn or back from a pond or running stream.

Weeping Sophora.—The *Sophora Japonica pendula* is one of the most beautiful of weepers. The foliage is smooth, dark green, with very pendulous branches and pinnate leaves. Occasionally trees of it stand hardy in the northern part of the States, but on this coast of course it does well.

Weeping Willows.—The *Salix Babylonica* is our old well-known weeping willow. From long usage this willow has come to be associated with either water or the sadness of life in the one case, indicative of a marshy region or

pond or stream of water; in the other, of the last resting place of friends once on earth. Beautiful as it is in itself, these very associations may sometimes preclude its introduction into almost any suburban or even extended place.

The American or Fountain Willow and the Kilmarnock come in well at times on the point where two roads meet and converge. They are also adapted to borders and corners of lots in cemeteries. Two owners of lots adjoining should conspire together to place the weeper upon the joint corner line.

Weeping Thorn.—There are several varieties of weeping Thorns (*Crataegus*), all of them pretty and well suited for planting on small lawns or cemetery lots.

TROPICAL VEGETATION—THE CEIBA TREE.

A native of the North traveling in Cuba, will find his admiration excited by a continual succession of strange and luxuriant tropical productions. Most attractive from its novelty, is the Palm, which in its beautiful varieties is thickly scattered over the island. The Royal Palm is perhaps the most symmetrical, though inferior in height to the wild Palms (*Areca oleracea*) of the *vueltabajo*, which often raise their straight and slender stems more than a hundred feet above the Savannahs. In the mountains may be seen the massy trunks and rich foliage of the mahogany; and the dark cedar, so agreeably suggestive of "approved brands" and their fragrant contents. On the sea-shore the mangrove stretches far into the waves, and pioneers the way for new accessions to the soil. The Bamboo, with its graceful and feathery arches, seems almost like the forest that might fringe Fairy-land. It forms,

when stripped of its leaves, a sort of monstrous fishing-rod, almost large enough to "bob for whales," and worthy to have been used by that ancient Fisherman of whose accoutrements it is said "you would have sworn, had you looked on them, he had fished in the flood with Ham and Shem."

In some places the joints, which will hold a full gallon of water, are used as buckets.

One of the most singular vegetable curiosities is a plant called, I think, *Majabue*. When it first rises out of the ground, it is a slender vine, twining round some forest tree. By degrees it increases in size, the stems and tendrils interlace, and cross each other in numberless windings, forming a kind of net-work around the body of the tree, until finally the whole becomes united into one firm shell, and encloses its prey in a living grave. It now forms a large and beautiful tree, with roots, trunk and boughs, having for its core the body of its dead victim. This tree or parasite grows all over Central America, and was photographed by Mr. Muybridge who showed a picture of it in this city, among his recently taken photographic views of that country and the Isthmus of Panama.

There are numerous other noticeable plants, which flower in July and August, but we must conclude with some of the Orchidaceæ; among them, a very curious one, is the Dragon's claw, or Coral-root, *Corallorhiza odontorrhiza*. It has no leaves, but the stem is about a foot high, with several brown sheaths. The flowers are greenish, in a long spike, the lip being white, with purple spots. The root is a collection of small, fleshy tubes, branched and articulated like coral. Another splendid plant is *Orchis grandiflora*. This is the finest of the genus. It bears a spike of large

purple flowers, sometimes more than six inches long, and we have made it by cultivation twice the length. It will flower readily in the garden, if taken up with a considerable quantity of its native soil, and set in a shady situation. Several other species of *Orchis* are in flower. A very pretty and delicate one is *O. ciliaris*, with fringed flowers of a bright orange color. This is not so common as most other species, and is found in swamps. All the species, indeed, are among our most curious and interesting plants. We have also found lately the beautiful *Arethusa*, worthy of its poetical name. It is slender and delicate; the stem with a few loose sheaths, bearing upon the summit a single large, nodding fragrant flower, of the most splendid purple imaginable. *Pogonia verticillata* is a curious plant. Near the top of the stem is a single whorl of four or five leaves, and just above it a single flower, with most peculiar sepals, very narrow, twisted, brown, and two or three inches long. *Calopogon pulchellum* is perhaps the most beautiful plant of the whole tribe. It has a tuberous root, a very slender scape of a foot or eighteen inches high, sheathed with a single long lily-like leaf, and bearing above five or six large purple flowers, which, for beauty of color, and delicacy of construction, are unequalled. *Goodyera*, with its curious radical leaves, conspicuously veined with white; *Spiranthes*, two or three species, with frail stems, and spirally twisted spikes; and the superb *Cypripedium spectabile*, with its white, purple-striped lip, and large plaited leaves, are all remarkable plants, and well worthy the attention of the curious. Why have we not a good monograph of the American Orchidaceæ?

THE clattering horseshoe wants a nail.

STRAWBERRIES THEN AND NOW.

Wm. Perry, in his address on this subject before the Pennsylvania Fruit Growers' Society, gives the following account of Strawberry progress within his remembrance:

Strawberries grown in the garden for family use, and the surplus carried to the nearest town was about the extent of the trade, until the introduction of Hovey's Seedling in 1834, which gave a great impetus to the cultivation of strawberries, and many persons planted them largely. Still many patches well manured and highly cultivated would make a vigorous growth and bloom profusely, yet the pistils would not expand, the blossoms would wither and blast, producing but little fruit; the grower became discouraged and concluded that raising strawberries was an uncertain business.

But after the publication of 1846, by Nicholas Longworth, of Cincinnati, that it was necessary for the Hovey and other pistillate varieties to be accompanied with a portion of staminate plants to impregnate them, to insure full crops of fruit, strawberries could be grown with as much certainty and as plentifully as other crops, and were sent to market by the wagon load, as peaches and apples had been before.

The art of growing strawberries abundantly was still more simplified by the introduction of Wilson's Albany, a hermaphrodite plant, having blossoms perfect in both organs, and wonderfully productive, large size, firm flesh, turning red before ripe, would carry a long distance to market and look well when exposed for sale, possessing in an eminent degree those qualities most desired by large growers who must transport their berries a long distance to market; and thousands of acres are now culti-

vated to produce the immense quantity of strawberries which are sent daily in their season hundreds of miles to the large cities, New York having received in one day more than 10,000 bushels. And in Philadelphia, in the height of the season, as many as 200 bushels have been thrown in the dock in a single day for want of purchasers, showing that the market can be overstocked with Wilson's Albany, which are not very palatable in the condition they are usually shipped to market from a distance.

Perhaps no person has given more attention to the improvement of the strawberry by cross fertilization, or whose efforts have been attended with greater success than E. W. Durand, of New Jersey, who has now more than 3,000 distinct varieties on his plantation, among which are to be found some of the largest and finest strawberries in cultivation, measuring from six to nine inches in circumference, such as Great American, Beauty, Pioneer, Black Defiance, Centennial, and other magnificent fruits, which are well worthy of trial in all sections of our country.

PIKE FISHING IN THE EAST.

The most exciting sport we ever had was on the St. Lawrence, capturing a muskalounge, which, as anglers well know, is of the same family as the pike (*Esoxidae*), only a very much larger species. Ours was a regular battle, such only as salmon anglers in the northern rivers of our Pacific Coast sometimes experience when they hook a twenty-five pounder. As the method was very different, we will state the particulars.

A friend and ourselves took a small skiff, with one trolling line, intending to take turn at the oars, and proceeded

at once to a favorable spot among the "Thousand Islands."

We held the trolling line with a spoon hook attached, while our companion pulled the oars. We sailed among the secluded places, wherever weeds were seen below the surface of the water, and were rewarded with good sport by taking several fine pike, weighing from six to fifteen pounds, which we managed to secure with ease, save the largest, which gave us some trouble. We then thought we would try deeper water, in the hope of tempting still larger fish. A few windings among the clusters of small islands brought us to the channel of the river, when we directed our companion to increase the speed of the skiff, determined that the curiosity of no fish should be satisfied, without first tasting our gilded spoon. We pulled for half a mile, when the river wound suddenly round an island, which presented a bold shore, from the rushing of the river's current. The tall forest trees extended to the very brink of the river, over which they hung, throwing a deep shadow on the water. This quiet spot looked as though it might be an attractive one for some solitary fish, and we accordingly took a sweep around the foot of the island. Scarcely had we entered the deep shade spoken of, when we felt a tug at our line, which was so strong that we supposed our hook had come in contact with a log or fallen tree. Our companion backed water with his oars to relieve our hook, when another violent pull at our line convinced us that it was no log, but some living creature of great weight. Our line was already at its full length of 150 feet; no alternative was therefore left but to give my fish more line by rowing after him.

This we did for a few minutes, when we began to pull in the slack of our

line, some fifty feet or more, when we felt the fish. The check was no sooner felt by him than he started forward with a velocity scarcely conceivable in the water, bringing the line taut, and the next moment our skiff was moving off stern foremost towards the river's channel. We soon perceived that our fish had turned his head up stream, and as the water was deep, there was no danger of his coming in contact with weeds or protruding rocks. We therefore allowed him to tow us for about five minutes, when he stopped. Then quickly backing water with our oars, and taking in our line, we carefully laid it over the skiff's side, until we had approached within twenty feet of our fish. We then gave him another check, which probably turned his head, for he again darted off in a contrary direction down stream. We pulled our skiff in the same direction as fast as possible to give the fish a good run before checking him again, but he soon had the line out full length, and was again towing our skiff with more rapidity than before. This did not last long, however, for we then took the line and hauled towards him to lessen our distance. He made another slap, when we managed to keep the line taut, and with our oars moved towards him. Our victim now lay on the surface of the water with his belly upward, apparently exhausted, when we found him to be a muskalounge, between five and eight feet in length. We had no sooner got him alongside than he gave a slap with his tail and again darted off the whole length of the line, taking us once more in tow. His run was now short, and it was evident he was getting tired of the business. Again the line slackened, and we drew the skiff up to the spot whence he lay turned on his back.

He now seemed so far gone that we

thought we might draw him into our skiff, so we reached out our gaff and hooked him under the jaw, while my companion passed his oar under him. In this way we contrived to raise him over the gunwale of the skiff, when he slid to its bottom. We then placed our foot at the back of his head to hold him down, in order to disengage our hook, which passed through his upper jaw. No sooner had we attempted this than he began to flap about, compelling us to give him room to avoid his immense jaws. Every moment seemed to increase his strength, when our companion seized an oar in order to dispatch him, while we took out our knife for the same purpose. The first blow with the oar had only the effect to waken our gentleman up, which, taking another and more powerful somerset, threw himself over the gunwale of our boat, which was but a few inches above the water, and with a plunge disappeared in the deep water at our side. We had scarcely recovered from our surprise when we found the line drawn out again to its full length, save a few tangles and twists, which had got into it in the struggle between us and our fish. We determined to trifle no longer with the fellow, with our small cockleshell of a boat, but to make for the shore and there land him. A small island a short distance from us, seemed to present a convenient place, and here, without further ceremony, we pulled, towing our fish after us. We leaped into the water about ten feet from the shore, and tugged away at our victim, who now floated like a log upon the water, while my companion stood by with an oar to make the capture more sure this time. In this way we landed him in safety just one hour and a quarter after he was hooked. This muskalounge weighed 49 pounds, and

had within him a pike of three pounds weight, a chub, partially decomposed, of four pounds, and a perch of one and a half pounds, which appeared to have been but recently swallowed; yet this fish's appetite was not satisfied, and he lost his life in grasping at a glittering bauble. Any person who has ever killed a pike of ten pounds or upwards, can readily imagine the strength of one five times that weight.

REPORT OF FRUIT FROM CALIFORNIA.

We continue this able and interesting essay of J. Strentzel, Esq., of Alhambra Gardens, Martinez, to the American Pomological Society for last year:

APPLES.—Growers are now curtailing the number of varieties, planting only the best and most marketable; large, showy fruit, even if lacking in quality, finds readier sale than the finest flavored, if small sweet apples find no demand. Cool, low sites, with rich soils retentive of moisture, produce apples in great perfection, juicy and keeping well. The following varieties are most in demand:

Two Stars.—*Yellow Newtown Pippin*, *Esopus Spitzenburg*, *Yellow Bellflower*, *Early Strawberry*, *Peck's Pleasant*, varieties extensively cultivated.

One Star.—*Astrachan*, *Alexander*, *Johnathan*, *White Winter Pearmain*, *Ben Davis*, *Rhode Island Greening*, *Smith's Cider*, *Early Harvest*, *Roxbury Russet*, *Rambo*, *Nickajack*, *Maiden's Blush*, *Northern Spy*, *Holland Pippin*.

PEARS.—Ancient pears around the old missions in most instances standing uncultivated and neglected, yet look thrifty and are overloaded with fruit—assuring us of the longevity of that tree; and younger orchards producing fruit of the finest quality, of our ability to supply our neighbors without stint.

Bartlett and *Winter Nelis* meet with a ready demand; all other varieties are more or less comparatively a drug on the market.

CHERRIES.—Are largely cultivated. The trees succumb easily under harsh treatment by the pruner, plowman and the gnawing and annoying gopher. *Black Tartarian* is the favorite, followed by the *Monstreuse de Mezel*, *Napoleon Bigarreau*, *Governor Wood*, *Mayduke*, and *Archduke*.

PEACHES.—Peach trees are very hardy, neither subject to the yellows nor the peach tree borer. Neglected trees are vitalized by a severe pruning. The favorite varieties are *Briggs*, *May*, *Tiltonson*, *Large York*, *George IV*, *Alexander*, *Crawford*, *Strawberry*, *Ward's Late*.

APRICOTS.—Are produced in great abundance. *Peach*, *Royal*.

NECTARINES.—Not a great quantity raised.

PLUMS.—Are very prolific. Most varieties do best budded on the peach; fruit perfect.

QUINCES.—The *Portugal* is the largest fruit, but the tree is subject to black-knot.

FIGS.—Are most easily raised, producing enormous crops, if properly irrigated. The *Mission Fig* is most palatable; the *White Marseilles* best for drying.

POMEGRANATES.—Require copious watering to fruit well.

ALMONDS.—Succeed well in locations not subject to late frosts; require moisture and good cultivation to raise large nuts.

ENGLISH WALNUTS.—Require the same conditions as the Almond; subject to sunburn, of the young growth.

PECAN.—Now on trial, promises to be one of our most valuable acquisitions. The seedlings grow rapidly without requiring much extra care besides copious

watering. The older trees look very thrifty, and are of symmetrical and handsome appearance.

Within the last ten years efforts have been made to raise the Chestnut. Trees are disseminated from our nurseries under the name of "Italian and Japanese" grafted Chestnut. They begin to fruit the third year from graft. So far the opinion is prevailing that the dry and warm climate of Central California is unfavorable to their growth.

The native California Black Walnut is a beautiful tree, and given a modicum of care, is a rapid grower and bears early; the nuts are very palatable.

GRAPES.—Several hundred varieties of the best European repute are cultivated. The dreaded phylloxera has admittedly made its appearance in Sonoma county, evidently introduced from Europe on imported vines; it does not make much headway. There are often found spots amidst our most luxuriantly growing vineyards, where, owing to an impervious, hard clayey soil or barren sand, the vines dwindle without making much wood, and the fruit is small, insipid, mildewed, without a sign of phylloxera. The best marketable varieties are: *Chasselas Fontainebleau*, *Black Hamburg*, *Muscat of Alexandria*, *Seedless Corinth*, *Damascus*, *Black Prince*, *Flame Tokay*, *White Malaga*, *Black Ferrara*, *Isabella*—enabling us to pick ripe grapes from vines during six months of the year.

(To be Continued.)

THE OIL PALM TREE—ITS PRODUCT.

Of the multitudinous species of the palm family, the products of a few only have found their way into American and European commerce, the most valued being those of the cocoanut, the date and the oil palms. Of these the appear-

ance of the last is the least familiar to most persons as, unlike the others, it has never hitherto been accurately pictured in scientific and popular works. In Western Tropical Africa there are vast regions thickly covered with the members of this species, and it is from this torrid region, especially from the River Bonny, that the largest quantities of palm oil find their way into the American markets. The trade with the natives is carried on chiefly by barter, glass beads of various forms, sizes, and colors being among the principal articles of exchange.

The trunk of the tree from which palm oil is obtained is seldom over thirty feet high, and is surmounted with a tuft of long pinnate leaves garnished with prickly petioles. The flowers are dioecious, and borne in dense heads, sometimes two feet long and two or more feet in circumference. In these closely crowded spadices the fruit is so compactly clustered that the bunches bear a strong resemblance to large pineapples. The individual fruits are about an inch and a half long, somewhat pear-shaped, and when fully ripe, of a bright orange color. They consist of an outer soft, pulpy substance from which the best oil is obtained, inside which, forming about one-fourth of the whole, is a very hard, stony shell inclosing the seeds, and yielding when crushed, a clear, limpid product called palm-nut oil. The fruit, when sufficiently ripe, is gathered by men, boiled in large earthenware pots by women, and then crushed in mortars. They are next placed in large clay vats filled with water, and women tread out the oil which rises to the surface and is skimmed off. It is then once more boiled to get rid of the water, and packed away in barrels or casks for exportation. It still retains the coloring

matter of the fruit, which is removed by subsequent processes in numerous factories in Europe, either by bleaching in shallow pans on the surface of hot water or by various chemical methods of treatment. As each drupe affords only about one-sixteenth of an ounce of pure oil and each tree only three or four pounds, an immense amount of labor is required to procure the product and a vast area of forest is annually destroyed to supply the demands of commerce.

Good palm oil is a fatty substance of the consistence of butter, of a rich orange color, a sweetish taste, and an odor like that of violets or orris root. It is now extensively used in the manufacture of candles, soap, and also as an axle grease, chiefly for the wheels of railroad cars. At a temperature of from 75 to 95 degrees F. it melts to a thin fluid, and the older it is, the greater the heat required to liquify it. By age and exposure it becomes rancid and assumes a whitish tinge. It is perfectly soluble in ether, slightly so in cold alcohol, but readily dissolves in hot alcohol, though on cooling it solidifies. It consists of margerine, oleine, and a solid fat like stearine, which is called palmitine, and constitutes two-thirds of its weight.

Palm oil is used more extensively for the manufacture of candles than for any other purpose, and the process, though somewhat lengthy, is highly interesting. Having been melted by a jet of steam introduced into the casks, and freed from all impurities, it is mixed with from one-seventh to one-sixth of its weight in sulphuric acid and briskly agitated for about two hours in copper boilers in which steam maintains a temperature of about 350 degrees. The sulphuric acid and the glycerine, which is an ingredient of its component fats,

are in this way decomposed and escape partly in the form of carbonic and sulphurous acids, and partly by subsequent washing. The impure acids are then distilled in copper stills, steam-heated to a temperature of 600 degrees. The dark residue in the boilers is made to yield still more oil by heavy pressure, and the black refuse that remains is used for fuel. When cooled, the distilled fat is broken into cakes eighteen inches long and about an inch and three-quarters thick. These are spread upon squares of cocoanut matting and are then piled on top of each other and submitted to hydraulic pressure at a temperature of 75 degrees. The fat obtained may be run at once into candles for the European and American markets, but for tropical use, it is again submitted to pressure at a temperature of 120 degrees.—*Rural New Yorker*.

THE CHINESE PRIMROSE.

I know of no plant so entirely satisfactory to most amateurs, ladies especially, as the beautiful Chinese primrose, *Primula Sinensis*, in all its varieties of form and color, from the pretty, single varieties, so like wild-wood blossoms, to the charming double kinds, which resemble miniature roses. The single varieties are best raised from seed sown from February until June, for succession. Plants desired for Christmas, sow in February; for February, in March; for March and April, the first and last of May, in our dry climate. The soil proper for the seed is composed of old leaf mold one part, two parts of light, fibrous loam, and fine sand sufficient to make it light and porous. Take five-inch pots, fill one-third with broken crocks, then nearly to the top with the compost, water through a fine rose or atomizer, then

sprinkle a very little fine sand over the surface, sow the seed carefully and then barely cover with finest sand sifted over through Swiss muslin. Cover with a pane of glass, and place as near the light as possible, in a shaded part of the conservatory or the east window of a warm room. As soon as the plants show their fourth leaves, or are large enough to handle, transplant them singly into small thumb pots, using drainage and the same soil as before, and place in a cold-frame or continue in the window for about two weeks, giving air indirectly each day, and gradually hardening to prevent the young plants from becoming drawn and spindling. As soon as well established, repot into five or six inch pots in which to bloom, using the same compost, but adding a third part of old thoroughly rotted cow or hen manure, the older the better. At this stage, I stand my pots in an old hot-bed, as the great secret of success, I find, is to keep the plants in healthful, growing condition from the time the seed germinates until they bloom, not allowing them to grow pot-bound, or their vigor to be checked in any way, as this will so injure the plants that you will have a most unsatisfactory bloom. Continue this course until about the second week in September, when they should be placed in some place where they will be entirely free from draughts of air. Keep the soil moist, but never either dry nor too wet, invariably watering with water as warm as the temperature of the room. As soon as the flower spikes begin to form down in the heart of the plant, commence using weak manure water, with a little soot added, twice a week.

After blooming, the plants require a season of rest, about six weeks or less, after which we grow them right on

freely, when they will produce abundance of shoots for cuttings; these I take off any time during the early summer, and filling small pots with drainage, a little compost and sand, the end of the cutting is embedded in the latter, the pot watered and then placed in a hot-bed, with good bottom heat, or, in lieu of this, in a warm spot. In one month the plants will become well rooted, when each one should be transferred to a four inch pot, and kept growing continually; examine every week or two, and just as soon as they are filled with roots transfer to a larger one, never allowing them to become pot-bound.—*Vick's Magazine.*

MARKET YOUR FRUIT IN GOOD CONDITION.

Some men fail to make money even from good fruit, because they are careless or slovenly or dishonest in their method of presenting it to purchasers. Except in rare cases and for peculiar uses all fruit should be ripe when offered in market. If it is not ripe it should not find sale. It should be sound also. If the quantity on hand is large enough to justify, it should be carefully assorted, the best specimens put by themselves even though they be few in number, and the least valuable placed by themselves. This will enable consumers to choose according to their purpose or means, and will most likely secure buyers for all the grades. To so arrange one's fruit in the boxes or crates as to have the finest specimens on the top, while below are mere odds and ends, is to act dishonestly as well as foolishly. Fair dealings as to quality, quantity, and price will always pay best in the long run.

Much attention should be given to the baskets, crates or boxes in which the

fruit is marketed. They should be neat, convenient in size, and attractive in appearance. Labels setting forth the name of the fruit, of the grower, and of his locality will greatly add to the attractiveness of the stock and the satisfaction of the purchasers. Growers and packers would make more money if they were more mindful of the fact that buyers are largely influenced by their eyes, and that the sight often dictates peremptorily to the appetite.—*Post*.

PLUMS AND PRUNES.

Having taken some pains to learn about plum and prune culture, we answer the above as follows:

1. High land of fair quality is best, as no orchard trees do as well on low, bottom land.

2. The nurseries are so well supplied with plums and prunes (we consider the prune to be a plum with free stone and rather dry meat, suited to drying) that the price will probably be lower. They have sold at 15 to 20 cents each tree, for good yearling trees. Three thousand trees ought to be planted out at a cash outlay of not over \$600, perhaps for less.

3. The best time is fall, though they do well planted by the 1st of April, and maybe later in favorable seasons.

4. They can not be expected to yield well before the fourth or fifth year. Trees on good soil need cultivation, and no fertilizers.

We have no experience as to the extensive cultivation of plums and prunes, but have found for twenty years past that they bear in gardens very profusely. We have set out of late years, 2,500 trees of the following varieties, selected for their known value as good drying fruits, to wit: Of Plums.—Peach, Columbia, Coe's Golden Drop, Washing-

ton, Reine Claude. Of Prunes.—The Italian, German, Petite d' Agen, varieties that ripen from the first of August to October, said to make the best dried product. These are, of course, not all the good varieties, but they are the ones we have invested in.

One word more: After experience, we now set out the trees a little higher than they grew in the nursery, and raise the dirt around them. This matter was mentioned in the *Farmer* not long since.

—*Willamette Farmer*.

LOOK TO YOUR YOUNG TREES.

There are thousands of young trees, those planted in streets particularly, that are being ruined by having their stems too tightly bound, or by rubbing against the frames by which they are enclosed. The first stops the growth of the tree where it is encircled and causes an effort to grow over the obstruction, injures its appearance and strength, and the last damages it by wearing away the bark. By a few moments' attention all this difficulty can be remedied.

We do not approve staking or tying up trees when they are transplanted, except in cases when they are so large that the roots can not be kept in proportionate size. When properly set there should be sufficient root support to hold them in position, even if to secure this the roots require fastening in their places by wooden hooks or otherwise. There are exceptional positions perhaps as, for instance, where there is protection from wind except in one direction, when a support would be beneficial.

Trees planted in streets are liable to be damaged by horses, cattle, and boys, and from these protection by frames is advisable. In such cases care should

be taken to pad or cushion the frame in such a way as to prevent the rubbing not of the tree so as to injure the bark. A little attention to these things will often save the tree.

FOREST HAUNTS.

Ye olden oaks, deep clad in greenness vernal,
With summer's sunlight on your rugged brows,

Methinks I hear the voice of the Eternal
Go out amid the swaying of your boughs.

Oh, not the mythic fear-inspiring Monarch
That but with dread our doubting thoughts invest,

But He who bears above wrong's thróned Anarch
Earth's sorrowing children on His loving breast.

And oft into your solemn shades retiring,
Of temple, altar, shrine, my heart to him
Has poured the burden of its high aspiring
In measured cadence through your cloisters dim.

As wayward child touched by some anguished arrow

From the full quiver of the coming years,
On mother's breast unbosoms wild its sorrow,
While loving kisses dry the brimming tears ;

So turn I, yearning for your dear caressing ;
World-worn and weary do I come again
To win some measure of maternal blessing,
If but a brief forgetfulness of pain.

From Life's fierce conflict, from its toil unending,

Awhile to rest me where no care intrudes,
And feel my soul in quickened pulses blending
With kindred souls that dwell in solitudes ;

To lowly listen to the mystic voices
That through your boundless sanctuaries ring,

And feel while Nature in her heart rejoices,
Some thrill of rapture in my own upspring.

The mossy bank wears meek a smile of blessing ;

There lives a gladness in each floral bell,
A spirit-healing in the mild caressing
Of balmy zephyrs in the woodland dell.

And hark ! a thousand tiny throats are winging
Joy's silvery songs amid the murmuring trees ;

O happy choir ! a choral anthem singing—
The blended music of the birds and bees.

These shall restore me to the pure and tender
Of feelings sullied in embittered strife ;
Some faint ray kindle of Hope's morning splendor,

That sheds a halo on each dream of life.

O gentle spirit that afar is hiding
In unfrequented wilds of wood and glen,
Couldst thou as in these tranquil haunts abide—
ing

Dwell in the homes and in the hearts of men.

I had not need to medicine this longing
With calm and quiet in your green retreat ;
Life's stony paths, with weary pilgrims thronging,

Were fair and flowery to these bleeding feet.
—Country Gentleman.

WORMS IN THE ORCHARD.—In many of the Atlantic States the orchards are infested each spring with a worm or caterpillar that weaves webs in the crutches and branches of trees, lays eggs and hatches out numerous broods of young. These young worms feed upon the leaves of the tree and frequently strip it of its entire foliage, sometimes destroying the fruit as well. If allowed to continue these depredations for a few years unmolested, they completely kill the tree, and the whole orchard falls a prey to what was in the beginning an enemy, but a weak one, and easily managed. Orchardists there were in the habit of arming themselves with long poles with swabs on one end, and swabbing or wiping down the webs or nests and then destroying the worms. In this way they would go through their orchards two or three times each spring, and thus keep down the caterpillars and save the fruit and trees. We notice by some of our exchanges that a similar caterpillar is making its appearance in some of the orchards in this State, and we wish to call the attention of their owners to the importance of attending to them at once. Let the killing be

thorough and complete of all the worms that can be discovered, so as to prevent, as far as possible, any increase. We have noticed that some one, we think in Sonoma county, has discovered a better way of killing these pests than our Eastern orchardists practiced. This is to saturate a sponge with liquid ammonia, and hold the same under the nest of insects for a few moments. This is said to be quick and sudden death to all that feel its influence.

WINDOW GARDENS.

In selecting plants for house culture we seem to follow a well-beaten track, and possibly for the good reason that there are not many sets of plants which will worry through a siege of ordinary window gardening. What with furnace-heated air and sudden changes of temperature, spasmodic watering alternated with unseasonable dry spells, and general abuse and starvation, it is a matter of surprise that there should be as many plants of easy house culture as there are. Chinese primroses (*primula sinensis*) are good window plants. Either the seed should have been sown in the spring, or as work for the season we should be sowing it now or propagating by divisions for next year's supply—since the heat of the summer months prevents its successful growth. In case no plants of your own raising are on hand, by all means go to a florist for a supply if you appreciate a generous reward for ordinary care. I think of no other plant that produces such a profusion of flowers—one pot alone showing hundreds of blossoms in the season. The conditions for its growth are a light soil, plenty of water—though none must be allowed to stand round its roots—and a moderate amount of sunshine. It is of neat, low habit, needs

but little room, is not troubled with insects, and blooms itself to death. The calla (*Richardia Ethiopica*) has in common parlance come into the front rank of lilies, though it is not a lily at all; however that may be, it is deservedly popular, both as a foliage plant in its stately habit of growth, and as a flowering plant. It is easy of culture, for, having had proper culture, rich soil, plenty of water and heat, and clean foliage, will ensure success. It must have a season of rest, and a good way to give it is by taking the pots into the garden in June and sinking them in some shaded place where they will need no more attention until just before the first frost. They must then be lifted, the pots washed, the plants cleared of dead leaves, and removed to some warm place where they may be watered freely. If you want to increase the present stock of plants, set the old bulb high in the pot. It is a good plan to allow the young offsets to remain with the old plant, shifting the whole into a larger pot when necessary, as there is then secured a succession of bloom. Callas are injured by the least frost, and must be looked after in cold or windy weather, when the temperature of the house is liable to changes.

STONE FRUITS AND LOW LANDS.

The past wet winter has pretty well demonstrated the fact that the river bottoms are not adapted to the cultivation of stone fruits, such as peaches, plums, cherries, apricots, etc. The stone fruit trees on the Sacramento river have suffered very extensively from direct overflow and seepage water this winter. Many of them have been killed outright, and nearly all have been so badly injured that they will not be able to mature their present crops of fruit,

and will probably die before the season is out. On the other hand, pears have stood the water well, and are heavily loaded with fruit. The pear tree does especially well on these river bottoms. The fig and the orange, too, seem not to have been injured in the least by the water. The figs are heavily loaded and in a good state of advancement, and the oranges are in full bloom and promise better than ever before. If, however, the water can be drained off the tules, as it is hoped it may by the drainage canal through the Montezuma hills, there is no better district in the State for all kinds of fruit than the Sacramento river bank country. The soil is of a light loamy nature easily drained and yet holding moisture well in the driest seasons. For the last ten years the best and largest quantities of peaches have come from the lower Sacramento river bottoms to this market. The trees that have produced this fruit are now nearly all dead, or so nearly so that we shall probably see no more fruit from them. And unless the waters of winter can be drained off more readily, it is doubtful if these orchards will be replanted.

BUDDING ROSES.

Amateurs may successfully bud roses, with a little pains, and produce very fine effects, especially with hybrid perpetuals. A good sharp penknife and the handle of a toothbrush ground thin and smooth, for a spud, are all the implements required. The operation may be performed from the middle of June till September. Select a smooth, vigorous stalk of the same year's growth, or a later growth of last season, and cut carefully across the bark through to the wood, but not into it, one-third or half way round the stalk. Then cut a slit downward from the middle of the cross

cut about an inch, thus forming a T. Cut the bud off at one smooth stroke, cutting close to the stalk, and raising the bark on each side of the perpendicular slit, very carefully with the spud, insert the bud. Bind the bark firmly with narrow strips of cloth or woolen yarn, leaving only the point of the bud exposed. Then bind on a handful of moss, taking care not to cover the point of the bud, and keep the moss damp. Allow no other shoots to grow on the budded branch, until the bud becomes set, which will be about six weeks, when the wrapping can be removed. By selecting several buds of different varieties, roses of different colors can be grown from the same stalk. The budded plant must be kept in healthy and vigorous growth. The same process with tea and other everblooming roses requires more care and experience to produce the best results.

TO MAKE COMQUAT PRESERVES.—Gather the fruit when dry, say the middle of the day; in the afternoon cut up the comquats, each one into four parts; carefully remove the seeds into a pie dish, to be afterwards strained, and the juice added to the jam; allow 1 lb. of finest white sugar to each pound of fruit. Put the fruit into a deep earthenware pan, cover it with sugar, and pour in the juice from the seeds too; let the whole remain so till next morning; place in preserving pan, or, in the event of there not being a preserving pan at hand, in a large camp oven; boil slowly for a few hours. When the preserve is thoroughly done, the skin of the comquat will look clear, or put some preserve in a wine glass, and when cold it will jelly nicely on the top. While the jam is boiling, care must be taken to remove every particle of yellow froth which rises to the surface. This

need not be wasted, as when reboiled it makes an excellent flavoring for marrow, suet, treacle, and other puddings. I rinse my jam jars with a little rum or brandy, and put the preserve into them while it is very hot, as it then jellies firmly on the top, but I do not tie them down till cold. Bladder previously soaked in spirit is a more secure covering than double paper.

Editorial Portfolio.

OUR FRONTISPIECE.

CALIFORNIA FAN PALM.—The California Fan Palm (*Prichardia filifera*, *Bahea filamentosa*) is a native of California and is found along the Colorado river and in some places in the desert in San Diego county. Several Eastern and foreign periodicals and horticultural papers have given illustrations of this palm, but none of them came anywhere near its natural structure. The portraiture we give above is taken from a photograph from a plant only three years old, grown by John Rock, the well-known nurseryman of San Jose. The seed was sown on the 15th of February, 1876, and the plant stands now four feet six inches high. The objection to palms has always been their slow growth, taking a long time to make a showy plant. Often people have planted the Australian Cabbage Palm (*Corypha Australis*), the most common one found in nurseries, and after a few years' nursing they have thrown them out because they would not make any headway in growth. About twenty years ago a lot of seed of this palm was brought to San Jose, and Louis Prevost, the pioneer nurseryman, cultivated them and raised about 50 plants. These were distributed over the State, notably some of them in front of the cottages

at Calistoga, most of them having grown into specimens of 20 and 30 feet of height. M. S. Latham, of this city, bought two in San Jose, which stood, at the time of purchase, about 25 feet in height, for the handsome sum of \$1,000. These he moved to Menlo Park, a distance of 18 miles. Many doubted their ever growing, but they have done finely. They stand now nearly 40 feet in height and are almost three feet in diameter, crowded with a beautiful head of fan leaves. They stand in front of a magnificent residence on an open lawn, and present a most attractive aspect.

Mr. Grant I. Taggart, of Oakland, informs us that two of these species of palm are growing at Shasta, on the premises of W. E. Hopping, County Judge of Shasta county. They were planted some twenty years ago; they have immense trunks from 4 to 5 feet in diameter. This must be about as far north as palms were ever cultivated in the open ground. At Shasta the ground is often covered with two feet of snow. This is another proof of the hardiness of this palm.

The California fan palm is the most distinct of the palms, having an abundance of fine threads hanging down from the leaves. It will be very valuable as an ornamental plant in all subtropical climates, being the fastest grower and hardiest of all palms. Not until the last four years has its native place been known, but upon the completion of the S. P. R. R., they were found along its line, and even whole carloads of large plants have been brought to San Francisco and sold. Several large specimens of these graceful palms are now adorning the splendid residences and lots of our railroad magnates on "Nob Hill." They may be now had almost at any nursery at a reasonable figure.

ENGLISH GOOSEBERRIES IN SAN FRANCISCO.

In visiting Mr. Benson's beautiful garden No. 2710 Howard street, we had the pleasure of noticing, among other choice and handsome horticultural attractions, about twenty English gooseberries, bearing a moderate and healthy crop of this delicious fruit. It is so rare a thing to find any of the English varieties of the gooseberry succeed anywhere on this continent, that, when it does occur, it is an event of much interest, to the horticulturist at least. The great cause of the destruction and want of maturity of this fruit in the United States is the mildew. The terrible effects of this pest is but seldom successfully counteracted. A soil rather humid and richly manured when the gooseberry is a success here, produces the largest sized fruit. A fine fresh loam, neither too heavy nor too light, eighteen inches deep at least, is the best, and if resting on a subsoil of clay or metamorphic rock, so much the better. Mr. Benson in most years is able to raise a crop of this fruit. It requires a plentiful supply of natural or artificial irrigation. The only other instance besides that of Mr. Benson, that we have observed success with the large English gooseberries, is at a Mr. Sandercock's place, about six miles northwest of the city of Napa, and near Napa Creek. On about an acre of land this cultivator of small fruits chiefly, generally manages to raise a crop of gooseberries every year. The soil appears to be very much of the description of that we have just given. In both these cases of successful cultivation above mentioned, the best sort raised is the Whitesmith, designated in the English lists as Woodward's. A red variety has been tried by the two cultivators named, but it

was found much inferior to the Whitesmith. Our hot sun in the interior is found rather detrimental to the bushes.

In consequence of the general failure of the English gooseberry in the United States, the small native American berry, called the Houghton, is almost entirely in cultivation. This kind has been lately improved in size by a better species, but it is every way far inferior to the English sorts, which are splendid and very numerous.

To obtain large-sized fruit is an object of great emulation in England. To effect this, every stimulant is applied that ingenuity can suggest; they not only annually manure the soil richly, but also surround the plants with trenches of manure for the extremities of the roots to strike in, and form round the stem of each plant a basin to be mulched or manured, or watered, as may become necessary.

This fruit is so common and easily raised in England's clime, that the gardens of the poorest people are full of them, and many a time when a boy have we thrown ourselves prostrate under the bushes, to enable us the more conveniently to feast on and fill ourselves with the large and luscious melting beauties.

GARDENING—A FEW HINTS.

SOWING SEEDS.—In sowing either vegetable or flower seeds, there are some requisites which must not be overlooked. The soil should be in right condition, or dry enough to be well pulverized, and not left wet, to form clods. It is better to defer work some days than to be annoyed the whole season with a baked soil, or hard lumps. Much depends on the previous condition of the ground; if old manure and vegetable mould have been fully ap-

plied and well mixed in, they will tend to give a fine friable soil.

In sowing the seeds of vegetables, three chief cautions must be attended to : 1, to have a fine mellow soil ; 2, to cover shallow, and not too deep ; and 3, except for the hardiest sorts, to wait till the soil is warm.

1. The importance of a finely pulverized soil is obvious.

2. The more shallow the covering, provided the moist condition of the seed is preserved, the sooner and more certainly the plants will come up. Seeds must have the three requisites for growth, of air, moisture, and warmth. If buried deep they can not get air. As a general rule, they should never be covered deeper than four or five times their diameter. We have known seeds of different kinds buried by ignorant gardeners several inches deep when they should not have been over an inch, or an inch and a half at the most. They were beyond the reach of air, and did not come up ; the seedsman was denounced for fraud. In one instance a neighbor had buried his beet-seed four or five inches deep, as he thought, with great care, and none made their appearance, to his great disappointment. The remaining seeds from the same package were then covered an inch, and the plants came up in thick profusion.

3. Hardy vegetables, like peas, may be planted as early as the soil will admit. Tender sorts, as beans and corn, would rot if planted too early, and must be left till the soil is warm. The same precautions must be observed with flower seeds. Those which are hardy, and which the frost will not easily kill in autumn, may be put in earlier than such as are cut by frost.

Thorough drainage is one of the most important requisites for successful gardening. Wet feet will spoil any

plant. Asparagus beds are sometimes killed by water below the surface. A cold, wet subsoil can not produce early or good crops.

A NEW INDUSTRY SUGGESTED.—The attention of the Academy of Sciences was directed by Dr. Behr lately to an investigation made in Victoria, Australia, by Baron Muller, as to the rapid extermination going on of certain species of acacia, from the bark of which tannic acid is manufactured. The Baron found that the destruction of these trees—the acacia pycnantha, acacia decurrens, and acacia retinoides—is going on extensively, and he suggests that in other parts of the world, and especially in California, it is important to cultivate them. They are quick of growth, and ornamental as well. The pycnantha also distills a gum arabic, but possibly this secretion can not be relied upon, Dr. Behr observing that it only is produced in certain districts of Australia, and that he never has seen it in other countries. The quantity of tannic acid alone, however, would make the cultivation of these trees profitable. There are twenty or more species of the acacia in California, but he was not aware that any of the species mentioned specially are under cultivation. The Doctor added that the causes of destruction are threefold—by stripping off the bark, by forest fires and by a species of moth. Harry Edwards stated that specimens of all the trees mentioned are growing in the southern parts of the State. Dr. Behr afterwards remarked that the export of the acacia bark to Europe must be profitable, but there they had the oak and sumach from which to obtain tannic acid, and yet there is considerable trade in the bark of the acacia.

CULTIVATION OF FRUIT AND REPORT
ON THE FRUIT AND VEGETABLE
MARKET.

We have sometimes in these, our articles on the markets, advocated both the cultivation and eating of fruit for their sanitary effects and taking the place of so much meat consumption. In general, in every country, and especially hot ones, like our own in summer in the interior, (the climate of San Francisco is exceptionally cool), people eat too much meat and not enough of fruit, or farinaceous food. The struggle to keep a supply of costly meat on the table is known to many a farmer and housekeeper on this coast where a large portion of that supply must be purchased. Many of us would be glad to use less meat, but our families are so used to meat three times a day that to deny them now seems almost starvation; in fact it seems that they can hardly do without it. But we assure these fathers of families that this is a mistake which a short time with a reform in this matter will remedy. In the first place, meat should be entirely banished from the supper table. Few men, women or children, unless they are exceptionally strong, healthy and have performed much muscular labor, should eat meat for supper, even if it should cost nothing. This much respect is due to the laws of health, that we may sleep well, rise up refreshed and renew labor with good instead of wearied bad feelings. Even at breakfast the meat is not really needed, but we are apt to eat it because it is generally placed before us and it is our habit. But a little meat, and especially eggs, may be tolerated at this meal instead of supper at any rate.

But now we have reached our point, eat more fruit. If possible always have fruit on the table—even if you have little or no taste for it, begin now to

cultivate it. To love fruit is one of the surest signs of a healthy stomach, particularly of one not addicted to alcoholic stimulants. Much of a fruit and farinaceous diet on your table is due to your children, whose health and general welfare you cannot but feel deeply interested in. If we had nothing but dried apples and peaches, they are, compared to meat for supper, capital articles of food and very healthful—keep them on hand in default of the many other improved preparation and preservation of fruits, both help out the supper wonderfully, and many extend to the dinner, especially if they have a sufficient quantity of sugar, and the peaches the addition of a little milk or cream. But when these fruits are fresh from the orchard or the markets, dried ones are out of order and sugar and milk unnecessary, only dumplings or a light pastry without much butter in it, is to be served, in which case a good sauce becomes necessary. Stewed fruits of all kinds, besides fresh ones, are very wholesome and palatable if you are not fond of jams, jellies and preserves, which, on account of the use of very much sugar generally put in them are not so healthy. Then there is another form in which fruits can be had—canning. By all means put them up and keep on putting them up throughout the fruit season. The immense abundance and variety of our fruits in California as now and most of the year exhibited in our markets, and in times of glutting often so cheap or moderate in price, afford no excuse to the housekeeper in not having always on hand a plentiful supply of these precious gifts of Pomona for the health and enjoyment of his family.

Since our last report on the fruit and vegetable market, about the middle of last month besides Strawberries, Rasp-

berries, Cherries, Apricots, Currants, Gooseberries, and Mulberries, which had been in for some weeks, Peaches, Cherry Plums, Green Apples and Pears began to crowd in, and all these fruits combined, both in quantity and quality, to make such a grand display as is probably not to be found in any region except our own. Indeed the market was beginning to be overstocked with some of these fruits, the Cherry Plums especially. Cherries kept up their price firmly. Tahiti Oranges, owing to the large quantity imported, were slow in sales and low in price, although they were of better quality than those which had preceded them. We observed a few boxes of White and Black Raspberries of the wild native varieties in their origin. The Prolific Strawberry, on which we mainly depend, owing to the genial season during the winter and spring, attained, in several instances, a large size and splendid coloring, some of them being three to four inches in circumference and of a deep crimson. Pine-apples and Bananas were very scarce. Excepting Green Peas, the quantity of vegetables on the stalls was large, and prices rather decreased in consequence. A prospectus of the California Raisin and Fruit Company—Fred. L. Castle, President, C. G. Jackson, Secretary, has lately attracted our attention. The *Commercial Herald* informs us that "this system stands unrivaled in the Eastern and foreign markets, and promises to do wonders for the Grape Raisin producers, and in fact to preserve all fruits without impairing their original flavor, color or purity. At present our leading canners are now actively engaged putting up berries, fruits and vegetables in variety, with every prospect of enjoying a good season's business." This company has purchased the right to use—exclusively

upon this coast—the Mefford system of fruit preserving. We now learn incidentally that the Cutting Packing Company with A. Lusk & Co., have purchased Blower's Grape crop of fifty acres (said to be worth \$11,000) to be used for Raisin making by this new process.

PEACH TREE BLIGHT.—J. E. Stewart, who has an orchard at the edge of town and is devoting almost all his attention to raising fruits and propagating improved varieties, informs us that the blight which came upon us this last spring has not alone caused the loss of a large crop of June peaches, but also about twenty of his best trees. He attributes the loss to the long-continued saturation of the soil during the winter. The trees all leaved out nicely, but as soon as the warm sun came they succumbed. J. H. Curtiss informs us that his own and several neighbors' peaches are affected similarly, all at the opposite margin of the city from Mr. Stewart's. Thus far, however, horticulturists from Alexander Valley, Big Plains and Upper Dry Creek have not discovered anything of the blight.

CHOICE OF FLOWERS.—Flowers lose their sentiment and grace with their freedom. So let us fill our baskets with a wealth of dark spicy carnations, lighted with some yellow and those choice white ones, dashed with roses, the most fascinating flower nature makes in her odd moments. Else take rose hyacinths and white ones, with Parma violets, or cyclamens, acacia and Isabella Sprunt buds and half opened roses, making rich mingling of color, or, if you will be choice, order a basket of violets. Defend us from these people who order their flowers as they do their dinner, without looking at them. Don't, if you love yourself and flowers,

leave the matter to a fashionable florist, unless sure your taste is not as good as his, or you will deserve the tame basket grounded with white carnations with red rose buds sticking up all over it skewer-wise, red and yellow, pink and white, like some culinary garnish, or the small cabbage of Jacquimonot rose-buds which goes by the name of bouquet. Doubtless it will require resolution and tact to get what you want, if you have fancies, for not even a leading modiste is so tyrannical, or so superbly ignores any preference of a customer, as the fashionable florist.

ROSES.—According to De Prouville, a French writer, there were, in 1814, only 182 varieties of roses, and the advantage of multiplication by seed is sufficiently evinced by the fact that there are now more than 6,000 varieties, the poorest of which are much better than any which existed at that day. Among the earliest cultivators of roses from seed were three Frenchmen—Dumont, Vilmorin, and Descemet. The former was the gardener of the Empress Josephine. When the allied armies entered Paris in 1815, the garden of Descemet contained 10,000 seedling roses, which Vibert, in his anxiety to secure from destruction, succeeded in carrying to his garden in the interior.

In England very little attention seems at that time, to have been paid to the production of new varieties from seed, and the English relied very much upon the Continent for their choice roses. Now, however, they are abundantly redeeming their reputation, and many fine varieties have been produced by English rose growers, at the head of whom stands Rivers, whose efforts are seconded by Wood, Paul, Lane and others. They are still, however, compelled to yield to the French cultiva-

tors, for to these we are indebted for our finest roses—for Lamarque, Solfa-terre, La Reine, Chromatella, the new white Perpetuals, Souvenir de Mal-maison and others.

The varieties of roses became increasingly great after the introduction of the Bengals, Noisettes, Teas, and Bourbons, all these classes producing readily from seed, and in endless variety. There is a willingness to cast aside the old for the new, and however much we may regret this disposition, for some old and truly deserving favorites, we can not feel willing to denounce it, for it exhibits a gratifying evidence of a desire for improvement, and the existence of a spirit of progress, which, dissatisfied with things as they are, is continually striving after nearer approaches to perfection.—*Parsons on the Rose.*

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METEOROLOGICAL RECORD.

FOR THE MONTH ENDING JUNE 30TH, 1878.

(Prepared for THE HORTICULTURIST by THOS. TENNENT, Mathematical Instrument and Chronometer-maker, No. 18 Market Street.)

BAROMETER.

Mean height at 9 A. M.	30.01 in.
do 12 M.	30.01
do 3 P. M.	30.01
do 6 P. M.	30.00

Highest point on the 1st at 12 M.	30.17
Lowest point on the 21st at 6 P. M.	29.90

THERMOMETER.

(With north exposure and free from reflected heat.)

Mean height at 9 A. M.	63°
do 12 M.	69°
do 3 P. M.	67°
do 6 P. M.	61°

Highest point on the 25th at 12 M.	77°
Lowest point on the 22d at 6 P. M.	57°

SELF-REGISTERING THERMOMETER.

Mean height during the night.	52°
Highest point at sunrise on the 26th.	58°
Lowest point at sunrise on the 26th.	47°

WINDS.

South-west on 14 days; west on 17 days.

WEATHER.

Clear on 14 days; cloudy on 2 days; variable on 14 days.

RAIN GAUGE.

7th.....	Inches.
Total.....	0.01
Previously reported.....	31.11
Total for the season.....	31.12



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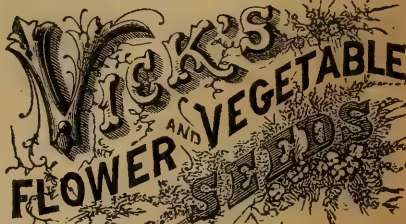
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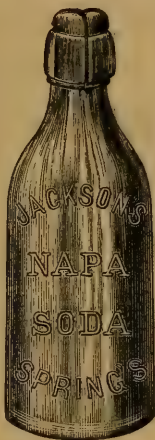
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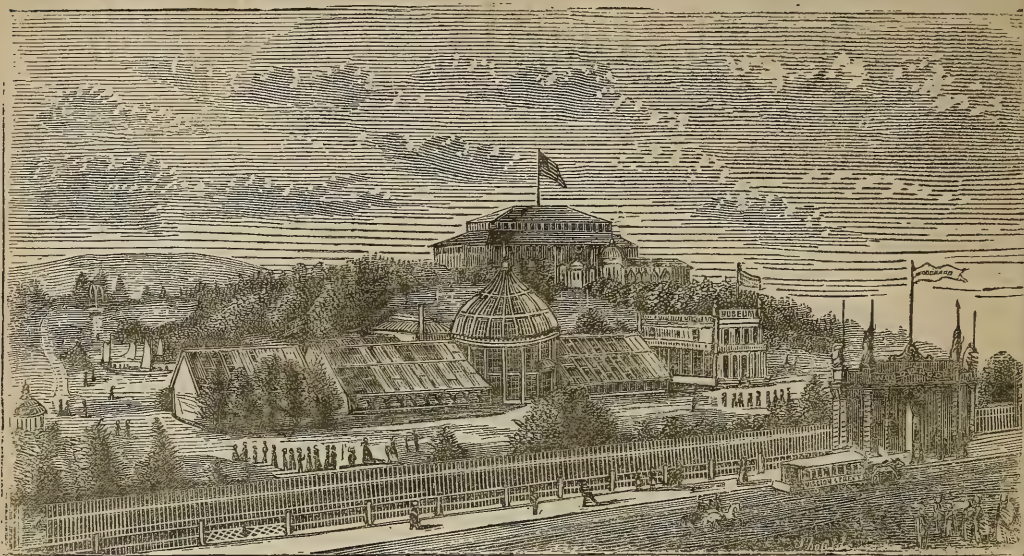
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VOL. VIII.

SAN FRANCISCO, AUGUST, 1878.

No. 8.

GARDEN NOTES FOR AUGUST.

BY CHAS. H. SHINN.

This month many flowers will flag and dwindle, and refuse us the light of their countenances, if we do not guard them with a double patience and a double skill. Some one says that daily visits are necessary to encourage flowers, but in this hot weather it really seems as if you must go and tell them to brace up, and think of starlight, and evening waterings, at least a dozen times a day. A sort of aimless wandering around the garden at times, neither as an obligation, nor in a perfunctory manner, but as instinctively breathing in fragrance, and seeing color, and hearing the contented bees in the hollyhocks—this is the best way to levy tax on your garden for the hours of work it requires. And, during this little familiar ramble, knife and twine and trowel ought to be inseparable companions, for there is always something to do in a garden. The lady who was the spirit of Shelley's garden, where the sensitive plant grew, "Sprinkled bright water from the stream On those that were faint with the sunny beam; And out of the cups of the heavy flowers, She emptied the rain of the thunder-showers.

VOL. VIII.—15.

She lifted their heads with her tender hands
And sustained them with rods and osier bands;
If the flowers had been her own infants, she
Could never have nursed them more tenderly."

Some of the late lilies will be just in bloom this month. The *Tigridia* flowers are also in their glory of yellow and scarlet wings, mottled with the tints of a leopard's tawny hide. The *Amaryllis* are still sending up their pink buds, and, if no accidents have happened, this is the month for *Tuberoses*. If a future increase of *Tiger lilies* is wanted, take off the little black bulbs in the axils of the leaves, and plant them in a moist place. They will make good plants in from two to three years. It is going a little back in point of time, but the *Calochortus*, one of our native spring bulbs, improves so much with cultivation that we advise it for every garden. There are two varieties, the yellow and the white, which are beginning to appear in some places. This is what the children, rambling over the foothills on merry May excursions, call "*Mariposas*," or "*Wild Tulips*." Children's nomenclature is almost always vivid and concise. *Nemophilas* are "*blue-bells*;" *Anemones*, are "*cream-colors*;" the charming *Aquilegias* masquerade as "*red-bills*," in allusion to

the five tiny trumpet-like spurs; *Calycanthus* is "spice flower;" and our wild *Frittelarias* are "spotties!"

Geraniums of the best double and single varieties are in their prime just now, and will so continue until frost. They are of even more value in our dry valleys than in the Atlantic States. We name a few of the most conspicuous kinds, under their distinct classes:

ZONALE.—Blue-Bells, Bicolor, Haidée, Gen. Grant, Jean Sisley, Master Christine, Sir John Moore, Snowflake, Distinction.

DOUBLE.—Aline Sisley, Asa Gray, Emily Lemoine, Francoise Portusata, Jewell, Le Negre.

SILVER LEAVED.—Bijou, Italia Unita, Mountain of Snow, Albion Cliffs.

GOLDEN BRONZE.—Black Hawk, Queen, Goldfinch, Marshal McMahon.

TRICOLORS.—Madam Pollock, Avalanche, Ebor, Lady Cullum, Emperor, Sunset.

The new "Happy Thought" Geranium has the yellow blotch in the centre of the leaf, and is very showy. Zonale and Double Geraniums are of great value for bordering a carriage road, or covering a knoll, because they do not need much water.

It is nearly time to sow seeds of annuals for winter greenhouse blooming. Without forethought now, there comes a most dismal time in the winter when it is too late or too early for almost everything. A great many seeds appear also to grow better when sown in the autumn days, or late summer, for they get a start before the rains, and then proceed without hindrance; but if we wait till the colder days the seeds do not start so rapidly, nor the young plants grow so well. And this month is the time for the main sowing of Blue Gum, if the trees are to be large enough to plant out next winter. Cuttings of

many garden plants, of Pinks, Geraniums, Bouvardias, Petunias, Carnations, Salvias, Hydrangeas, Coleus, etc., may easily be taken now, and put in saucers of moist sand, or in little boxes, always packed closely. Thus we shall have nice, young, free-blooming plants for winter, and we shall get more flowers than if we depended only on scraggy, wornout, and disheartened old plants.

Linum Lewisii, a perennial flax, has bloomed a little. The blossom is a charming blue, and when the plant is larger it will be showy. All the Flaxes are worth notice; *L. Flavum*, the yellow, and *L. Narbonasse*, the white, varieties are also perennial, whilst one of the annual kinds, *L. Grandiflorum*, is a bedder of unusual brilliance, whose scarlet flowers are universally admired. Some varieties of the Rock Flax are used in England for rock work, and natural gardens, and beside streams. One of these, the White Rock Flax, was lately figured in a colored plate of the English "Garden."

Another thing not always nice, but this year a success, is the *Zea Japonica*, or striped Japan Corn. Sometimes the leaves do not come true to the markings, but are almost altogether green; this year the colors have been superb, and some of the "broad bent sabres" of the leaves are nearly white; some are tinted with pink and rose, some are regularly banded, and some are half green and half white. This August weather has also helped the *Ricinus Sanguinea* (one of the Castor-beans) to unfold a purple leaf like the flap of an army tent, or like an elephant's wrinkled ear. A bigger single effort no single ambitious plant of its size ever achieved. A *Ricinus* is the "Esop's Frog" of plants; it looks at an ox-like fig tree or sycamore, and swells out of sheer envy, and grows red in the face

with rage. Poor pithy stemmed and medicinal imitation of a tree !

There is a little, long-blooming annual, known as the *Saponaria*, whose beaded stars of pink and white are very prim and precise. I never saw it anywhere but in my garden, still I like about a hand's breadth. I think it is a Calabrian plant, and it makes me think of Italian peasantry. There is also a rather coarse plant, with deeply notched, whitish leaves, a single orange-yellow flower, and a queer long seed-pod. This is the *Glaucium corniculatum*, an old Roman Poppy, which doubtless Fabius plowed under when he planted his beans, and Cæsar slashed with a wooden stick when he was a younker. Once I saw the blue corn poppies whose ancestors waved in English fields before the days of Hengist and Horsa. And what has the Hyacinth not seen, or the sad, pale Narcissi? The *Acanthus* leaf gave us the Corinthian column; the Honey-suckle flower became the Greek Anthemion; the Lotus was a part of Egypt's mystery—even the flowers are history. Indeed, the flowers we love most are interwoven with human art and song forever.

HOUSE PLANTS.

BY W. C. L. DREW.

Many homes in California have to depend on house plants to furnish the necessary floral gems, with which to wreath the hair or decorate the table, it being impossible to have the regularly laid out flower garden, either from lack of time, scarcity of water, or other less important obstacle. But house plants, or plants grown in pots or boxes, are in a measure, quite as satisfactory, and should be in greater or less quantity, as circumstances allow, cultivated

in and around every well regulated home in the land.

In selecting house plants, care should be taken to select, in the first place, those varieties which will supply in the greatest abundance their rich and varied blossoms, and at the same time requiring the least care, as it, in many instances, will not pay to spend much time on them; also especial attention should be paid in the selection of those varieties which are hardy.

On this, success in a great measure depends, and the hardier the plant or shrub is, the better will it withstand the rigors of winter, as it is a well known fact, that there are but few house plants strong enough in themselves to stand the winter without some outward protection, especially is this true of the choice varieties; but not alone on account of winter should hardy plants be selected, summer also tries them severely. Frequently there will happen a busy day in which the flowers are, for the time overlooked, and it takes a plant of hardy constitution to withstand this neglect.

In the selection of varieties of house plants, for either summer or winter blooming, it will depend a great deal on the person's taste who proposes to cultivate them. We can recommend the following varieties as giving a constant succession of bloom through the summer and fall, and many strains of them will furnish blooms throughout the winter and early spring seasons, providing of course that they are properly managed, and not entirely neglected.

The following are the varieties we would name, selecting from one to a dozen strains of each variety, as taste and judgment dictate, (not forgetting the length of the purse, or, more properly, its contents): Monthly Rose,

zonale and double Geraniums, foliage and scented-leaved Geraniums, Lady Washington Pelargoniums, monthly Carnations, Heliotrope, Begonias of flowering and foliage sections, Fuchsias, Abutilons, Oleander, Hydrangea, and Petunia. In the florists catalogues will be found numerous strains of the above, and many other plants from which the merest novice can make a quite satisfactory selection. In potting house plants, it should be borne in mind that the roots of plants need air as much as the plants themselves, and therefore care and judgment should be used in the selection of pots for this purpose; earthen pots if not too highly glazed are most suitable for this purpose. In many cases it will be impracticable to use pots of any description; neatly made boxes may be satisfactorily substituted. The soil should be composed of a mixture of leaf mould and sand, in the proportion of one part sand to five parts mould. By the use of sand the soil is prevented from baking or clogging together.

In cultivating house plants pains should be taken to bend all the energies of the plants to blossoming. In order to accomplish this, the plants should not be allowed to ripen seed, otherwise they will produce fewer and inferior blooms. In order to prevent the plants from becoming one-sided, they should be turned frequently; if this is not attended to and they are allowed to grow up as they choose they will present an awkward and ungraceful appearance. All unsightly branches should be cut off, and dead, dying, or decayed leaves should be removed; worms or plant lice, which often prove troublesome, can be easily removed by using tobacco tea, or warm water in which common soap has been dissolved.

In summer time, if partially shaded

from the sun's direct rays at noon, they will not be apt to burn.

During the warm summer days it will be necessary to water copiously every evening. In winter they should not be watered oftener than twice a week, and frequently but once; in this the cultivator must use proper judgment. Water must never be thrown on the foliage when the sun shines on it, or it will scald and disfigure it.

REPORT OF FRUIT FROM CALIFORNIA.

3. *New Native Varieties.*—The desire to excel in pomology remains active, stimulated by the well cultivated taste for the best of a kind, and finds recompense in liberal prices for such fruits as are rare or of very superior quality, causing new fruits or improved varieties to be eagerly sought after and tried. Those originated abroad and persistently heralded are found in most instances to be overrated and by no means to reach the standard of the best. Especially is this the case with the new named peaches. They are all too small, with earliness as the only desirable point, but even this is entirely eclipsed by a native seedling under the appellation of Briggs' May Peach, one to two weeks ahead in the market of its competitors. *Shinn's Rareripe* promises well. Besides these, there are many fine chance seedling peach trees of superior merit, but so far no effort at money making by their propagation has been made.

Skinner's Seedling, originated in Santa Clara county, has the only claim among apples.

Seedling pears come nearer to the parental stock, often blending the desirable qualities of the two varieties, but none have been sufficiently tried.

We have here the *Golden Champion*

grape, imported at \$5 for a goose-quill root, which proves itself a miserable failure.

4. *Synonyms*.—The standard and nomenclature of fruit is rigidly observed with but a few deviations, of which the most noticeable are: The *Black Prince* grape is called here the *Rose of Peru*; the *Red Lombardy* is *Flame Tokay*; most white and red plums are called in the market *Green Gages*, and black cherries are *Tartarians*.

5. *Obstacles*.—Multitudes of inferior varieties, propagated and sold by nurserymen under captivating promises of excellence, are found, after years of waiting for the fruit, to be of no market value. Trees being now propagated by the million in single establishments, makes it impossible to obtain scions or grafts from bearing trees, whose fruit comes up to the full standard of excellence of a variety, and to this circumstance may reasonably be ascribed the deterioration of many old varieties, over-production, high cost, and inefficient or unreliable labor; insects begin to multiply, increasing the cost of production.

6. *Culture and Pruning*.—Clean, mellow culture is imperative. The waste of constituents of the soil must be replaced, and the renovating system of pruning assiduously followed, with the removal, while young, of all superabundant fruit. Any kind of alkaline washes consisting of lime, potash, salt, etc., are of decided benefit in destroying mosses, fungi, and insects on the stems or roots of trees. The good effect of one efficient washing of the stem may be observed for years, in the cleanness and brightness of the bark as compared with the unwashed.

7. *Storing*.—Large quantities of apples and pears can be conveniently stored in piles under each respective

tree, and they keep fully as well as under roof, the rain doing no injury, and a slight covering being sufficient to keep out frost.

8. *Packages*.—For apples and pears, 40 to 50 lb. boxes; for stone fruits and grapes, 20 to 25 lb. boxes.

9. Statistics could be compiled from the usual assessors' and surveyors' general yearly statements, without gaining reliable data of the growth, extent and results of horticultural science in our midst; these are more vividly represented by commercial transactions in that line by comparison, and the price, abundance and quality of the fruit in the central places of consumption. Before the year 1850, but few fruit trees were grown in the State, and after the rapid increase of population, that small amount raised sold at fabulous prices. This was an incentive for many to plant extensive orchards, no matter at what expense of money or labor, and those bearing earliest proved exceedingly profitable. 75 cents to \$1 per pound for fine peaches, and *Mission* grapes, 25 cents to 50 cents per pound, stimulated others to follow the enterprise. From three to five years brought most of the trees into bearing, soon glutting the market. Prices rapidly sunk, and by 1865 fruit was within reach of all; by 1870 some varieties had to look for disposal to distant markets, and drying and canning were engaged in extensively. A gradual depression in prices continued until last year (1876), when with a superabundant crop the prices realized did not cover the outlay for production. It is not from supineness or lack of enterprise on the part of the horticulturist that such a state of facts exists. Our market for dried and canned fruit is governed by the price of the foreign article, irrespective of the cost of labor current among us, and the

available help is untrained and unreliable. To illustrate our position, I refer to the strawberry culture. The first planting around Oakland in Alameda county has all been vacated, and the largest gardens are now established in Santa Clara county, mainly in the hands of Chinamen, who raise the fruit on shares, whereby the owner of the land is assured of a steady and certain income, and the shrewd Asiatic, a stranger in the land, manages with such consummate skill and ready co-operation that the market is most judiciously supplied, and a remunerative price secured, which was not formerly the case.

Strawberries are to be had almost any day of the year, but the main crop continues about four months, and at the height of the season as many as 700 chests, or about 50 tons, are received daily in San Francisco, and distributed to distant points in the State.

(To be Continued.)

FRUIT AND VEGETABLES OF AUSTRALIA.

With the exception of the intertropical fruits, although there are only a few of these, all fruits from the other parts of the globe thrive most luxuriantly in South Australia, and come to such perfection in size, and frequently in flavor, as is hardly known in other countries; and many fruits are found to improve materially by the change, as the climatic conditions often succeed in modifying and improving their condition. On the plains grow apples, pears, apricots, peaches, nectarines, oranges, citrons, lemons, plums, cherries, figs, almonds, mulberries, olives, and grapes; while in the hills and gullies besides are grown strawberries, raspberries, gooseberries, currants, walnuts, chestnuts, filberts, etc.

The apples grow to great sizes, but do not always possess the same fine flavor as in the Eastern portion of the United States, and in England, and contain more acidity. The apple trees suffer much from the attack of the American blight, for which no radical remedy is at present known. The trees which grow in the hills or in rich soil suffer most, and succumb at last to this scourge. The pears grow to perfection, and maintain the same flavor as in the most suitable parts of the globe.

The fruit of the peaches, apricots, and plums, reach to a size and contain a flavor unknown in Europe. The cherries do not attain the perfection of England or of California, or some sections of the East of the United States. All the stone-fruit producing trees are short-lived, especially those of the peach, which live scarcely to 14 and 16 years. This early decline may be owing to the quick, luxuriant growth and early and excessive bearing, circumstances which produce over-stimulation and early exhaustion.

It often happens that by a fierce, hot north wind the parts of fruit, viz.: apples, pears, plums, apricots, and peaches, on the plains, which are exposed to the north, become quite black, and are, in the true sense of the word, "baked." The writer of this article states that they are experiencing such days at the present time. During the last eight days, he says, the reading of thermometer had been from 98° to 110° in the shade; but on the 10th of January it was scarcely endurable, at about 3 o'clock p. m. the thermometer registering at the Botanic Garden, Adelaide, 116° in the shade and 166° in the sun. That such a temperature must prove very destructive to our introduced plants can easily be imagined. In fact, the leaves of trees and shrubs had the

appearance as if a fire had run over them. [Just such a scorching as this occurred in California in the spring of 1877, when many fruits and plants appeared roasted as by fire, and the crops of English Gooseberries in Napa Valley were totally destroyed.—EDITOR.]

The finest grapes are grown in the plains and the slopes of the Mount Lofty range facing the plains. Here they grow to a great size, the summer months ripening them to the greatest perfection; and the South Australian wine must obtain a high character in foreign markets. For the last five years the oidium has made its appearance in our vineyards, but not with such bad results as in Europe. Also the *phylloxera* has appeared in the vineyards of our neighbor Colony, Victoria, and may, it is feared, also attack our vineyards. From this it will be seen that the Australian vignerons, like the European, have to contend against the two greatest scourges which can invade a vine-growing country.

The cultivation of the olive is a great success, and the oil considered perfect.

All vegetables can be grown during the autumn and winter [which occur in California's spring and summer months] on the plains; but in comparison not so successfully as in the hills, where are raised the finest vegetables and other culinary herbs throughout the year in great abundance. Cauliflowers two feet in diameter are often seen in market—cabbages, asparagus, turnips, artichokes, leaks, onions, beets, carrots, potatoes, endive, lettuce, celery, cucumbers, water and sweet melons growing to an extraordinary size, and of the finest flavor.

The cucumbers and water and sweet melons grow most luxuriantly on virgin soil, but if grown on the same spot several years running (although ma-

nured) they degenerate in size and flavor, and ultimately produce no fruit at all.

That the South Australian cereals are considered to be about the finest grown in the world is pretty well known.

When a new-comer visits for the first time our agricultural and horticultural shows, and observes the fine display of splendid flowers, fruits, vegetables, and cereals in their utmost perfection, he must consider South Australia a favored land; and it is, indeed, surprising, that our fickle climate, with its extremes, droughts, hot winds, can produce such developed specimens of nature's gifts. —*R. Schomburg, Director in the Government Botanic Garden, Adelaide, South Australia.*

THE EUCALYPTUS GLOBULUS.

The interest attached to the Australian Blue-Gum tree, both in relation to its great rapidity of growth and its reputed hygienic qualities, is still increasing, and the demand for plants and definite information regarding their culture and sanitary value continues unabated. There is no special difficulty in propagating the plant. The seeds are small, very similar in size and appearance to those of the onion, and vegetate rapidly when sown in good condition. The young plants are rather delicate at first, but after a few weeks they grow with great rapidity. In the greenhouse (in the East), they have reached a height of 4 feet in as many months from the seed, and young plants 1 foot in height planted out in May (at the Botanic Gardens, Washington), grew from 4 to 6 feet before winter. This applies to plants in rich, moist soil; in poorer and drier they do not reach such dimensions, but will stand a greater degree of cold. Succulent

leaves and branches shrivel when the thermometer falls to 30°, while the more rigidly matured shoots of the slow-growing plant have survived, often being subjected to 12° of frost.

As a forest tree it will not flourish in this country north of the thirty-fifth parallel of latitude; probably it will not succeed even up to this point; but it is unnecessary to experiment with it in higher latitudes, so far as pertains to hardiness. As to the sanitary value of the *Eucalyptus*, evidence is accumulating to show that it has a tendency to lessen malaria and destroy miasmatic poison. This has been largely attributed to the great absorbent power of the roots, but this value will be equally shared by other trees of similarly rapid growth, such as our strongly growing poplars. It is no longer doubted that several species of the *Eucalyptus* evaporate with water a volatile oil and a volatile acid, which permeate the atmosphere and contribute to its invigorating and healthy nature and character.

The absence of malarial diseases in Eucalypti forests seems to be well established, and as the planting of useful trees is not likely to be overdone with us, these claims for special recognition are worthy of consideration and encouragement. Of the genus *Eucalyptus* upwards of 100 species have been described. Growing at different elevations, and embracing in their habitats many degrees of latitude, it is to be expected that some of the species will resist cold better than others. The numerous species possess different properties in the various oils, gums, and dyes which they furnish. The iron-bark gum, the stringy-bark gum, the curly gum, the red gum, and the sweet-scented gum, with many others, are all equally worthy of introduction and trial.

—William Saunders, Washington, D. C.

THE RHODODENDRON.

BY CHARLES H. SHINN.

Deep in the wonderful woods
The river Navarro flows,
Through thickets of fern and rose,
And under the clinging vines,
By vast and murmuring pines,
In glorious solitudes.
There are bright singing birds
In hollows, where the feet
Are lost in blossoms sweet,
As Love's remembered words.
And there are toiling bees
And sleepy butterflies,
And gentle chirps and cries
From slopes of grass and trees.
There—where no winds beat loud,
Or is there sound to mar
The stillness, except low and far,
The dim waves on their distant bar,
Nor motion but a sailing cloud,
I found a glorious flower—
Queen of its perfect hour,
And ripest beauty, when the prayer
Of hidden root and conscious bud,
At last was understood.
And, trembling in the happy air,
The blossoms shone, while height on height
Circled above its shrine.
Bravely the woods of fir and pine,
And royal cedars, bent their might
To messenger the ferns that lie
On beds of sparkling moss,
And these fair pages cross
The little streamlet, bluer than the sky,
To nestle, in this golden hour
Beneath the queenly flower,
And whisper at its clinging feet, and sigh
Those songs that in earth's younger years,
Were known in fairyland;
And chime with laughter, melt with tears,
For those who understand.
O blossoms full of sunset gold,
And suprise purity!
O sparkles that the full bells fold,
As glimmers on a moonlit sea!
O purple dots that swim
Around the crimped rim,
As stars that gather in the milky way!
O buds that peep between
The circling leaves of green,
And open with shy patience day by day!
I love you all, as children love
Their simple daily bread;

I seem to feel the currents move
 From furtherest cell and thread,
 And sparkle in the gentle air,
 To color-waves, and blossoms fair.
 Long, sweet Navarro, may thy stream
 Linger around the pleasant isles;
 Long may the Rhododendrons gleam
 Beneath the holy forest aisles,
 Long may the tired wanderers dream
 With singing birds and blossom smiles.

CALIFORNIA PECULIARITIES.

BY W. C. L. DREW.

Through the foot-hills, at this season of the year, the early morn is perfectly enchanting about sunrise. The healthy and invigorating atmosphere is filled with a dewy fragrance peculiarly Californian, making the happy spectator feel as buoyant as if freshly invigorated with a draught from the fountain of youth. On one hand, we behold the vineyards amid the rolling hills, covered with emerald leaves, and the grape in blossom. In the front is an apparently endless orchard, heavily laden trees completely shading the ground, while here and there we notice a giant cherry tree, crimson with ripe, luscious fruit, tempting us to invade the grounds. Looking to the other hand, many a hill covered with tall and waving rye, golden wheat, or newly-mown hay, presents a truly grand and imposing picture. Now is the time to enjoy scenes like this, while all nature is wearing her spring robes; while mankind is happy gathering in the abundance with which she has blessed him, and the ranks of Kearney, the San Francisco labor reformer, are nearly deserted for the harvest field.

The equability, mildness, and dryness of our climate are peculiarly favorable to the sound action of the vital organs of the vegetable world. Vegetable growth is exceptionally vigorous here.

Our fruit trees grow more rapidly than in the Eastern States, come to maturity earlier, and bear more abundantly and are free from insect depredations. The variety of our vegetation is greater; our vegetable markets are justly the pride of our people, differing from most of the great markets of the world—they are perpetual. And further, when frost and snow cover most of the Eastern States and cities, the greatest varieties of all kinds are produced here, and are most abundant in the city markets and peddlers' wagons. Winter and early spring are the most prolific seasons. In the summer and fall seasons vegetables are raised through irrigation, and consequently are much less abundant.

Even our flowers are far more prolific. We have not as many roses in June as they probably have in New York or Boston, but we have them all the year round. Further, ours form handsome trees, with trunks from two to four inches in diameter; large, spreading tops four to eight feet across, and growing ten to twelve feet high. Our oleanders, instead of being puny pot-plants, grow in the open air the year round, forming handsome flowering trees twelve to twenty feet high, quite as large as an ordinary-sized apple tree. Our verbenas and pansies furnish flowers at Christmas as well as in June, without the aid of protection of glass or green-house. The palm tree and the persimmon, the orange and the apple, the vine and the pineapple, the fir and the nopal (or prickly pear), stand side by side to prove that the climate of California is favorable to the growth of plants indigenous to both the tropical and frosty regions.

California has already produced vast changes in the financial and commercial world. So rich has been her production of gold, that its value has been re

duced heavily all over the civilized world. Its mines of cinnibar have affected the price of quicksilver to a like extent, and, for many years to come, our mines bid fair to hold their own. In our own vicinity—El Dorado county—the mines are, if anything, improving on what they have been for the last few years. In fact, so greatly has confidence in our mines been restored, that many which have been idle for five or six years were, this spring, started into new life again, with new and improved machinery, thus bidding fair to restore California to her “good old days of yore.”

El Dorado Co., Cal.

CINCHONA CULTURE.

SAN FRANCISCO, July 20, 1878.

SIR:—Offering my thanks for your late information, I beg leave to make the following proposal: Forming the intention of leaving for the northern portion of South America, I should like to make myself useful to this State in any way in my power. No question of a more desirable nature and equal importance has been lately raised in matters of practical plant growing than the introduction and culture of the Cinchona tree into this region. The value and practicability of the culture are admitted beyond a doubt. What seems to be wanting is the complete trial. With this view I have the honor to offer my services for collecting seed and leaving plants in their native country. Baron Von Mueller, in Melbourne, in his “Select Plants,” 1876, pages 51 and 52, highly encourages such a trial, basing his statements on the fact that thousands of Cinchonas were grown in the Botanic Gardens of his place, enduring there Australian heat and cold. The two best kinds, unquestionably, are the *Succirubra* and *Pitayensis*—the former

for a more hot and damp climate, the latter for more cool and dry ones, both very durable species, and the quickest growers of the genus. Mr. Cross, in his report on the Pitayo Cinchona, relates that this species ascends the Mont Pitayo to a height where potato and barley cease. Besides, the Pitayo passes by far as the most valuable of all. Already with the fourth or fifth year begins the barking even of the common species.

I myself observed the good condition of the former at the extensive plantations at Hae-gala, in Ceylon, and saw the specimens of the Botanic Gardens of Australia.

Interested as you naturally are in the matter, you will, I trust, lend your full support to this proposal by finding out, if possible, the gentlemen or house wishing to undertake the trial of this valuable plant. Any order given will meet with my full care and acknowledgment, as support to the Naturalist.

I have the honor to be, sir, with respect,

Faithfully yours,

FRANK ERTEL,

Professor and Naturalist.

TRIMMING GRAPE VINES.—Looking over the grape vine you will observe many slender canes not having more than half the diameter of the stronger ones; these must be cut close to the parent stock. Then cut off the stronger canes at the point where they begin to decrease in diameter. This point is generally from three to six feet from the terminal bud, and may be known from the faintest color of the wood and immatured leaves. This done, the vine is pruned.

A gentleman of San Francisco opened a Los Angeles orange and found inside, near the stem end, a little orange about an inch long and three-quarters wide.



Rod and Gun.

FISHING IN NAPA CREEK.

During our sojourn of three weeks lately at the delightful watering place of Napa Soda Springs, in the beautiful valley of Napa, in addition to our pleasant walks, drives and rides in the valley to the lively and thriving little city of Napa, and other parts of the country, and over and along the mountain slopes of the Coast Range—we say, besides all these excursions, we several times fished in the above-named small stream, which meanders nearly through the centre of the valley, handsomely shaded (too much so, indeed, for convenient angling) in most parts by a dense and luxuriant growth of oak, maple, willow, alder, and other trees and shrubs, and on the ground with a sprinkling of many late though still lovely wild flowers. We had hoped that in our angling recreation we should possibly have taken some of the black bass which four or five years since were put in this (in summer) clear and gently-running stream, by the State Fish Commissioners; but we failed to do so. These noble fish, so productive in the East of fine sport with the rod and line, baited with the live minnow, and at times captured by the use of the artificial fly, seem not to have multiplied much, if at all, in California streams or lakes; al-

though, about three years since, a few small ones were said to have been taken with the worm in a portion of the creek near Napa City. Of course, a few of these splendid fish may still be in existence in some favorable spots in Napa River, but the matter is doubtful, and we shall probably have to wait patiently for the successful experiments of future importations, to be planted possibly in Lake Merced, or other more congenial waters.

But to return to our angling experience in Napa Valley. In general, having fished here for several years past, we had discovered that trout were quite scarce in this brook, having only occasionally taken two or three in a morning's trial; but, this year, we had the pleasure to find them much more plentiful, having taken eight or ten in a day's fishing, averaging about nine inches in length. These were taken with the worm as bait, but in doing so we more often caught that common cyprinoid of our rivers, the vulgarly-named "pike," or "Sacramento pike," which on account of its generally great abundance in very many of the waters of our State, is pretty well known to all anglers. It is a long, sharp-headed fish. Its scientific name in ichthyology is *Lavinia Gibbosa*, according to Drs. W. P. Gibbons and William O. Ayres, who have presented specimens and given descriptions of many of our fishes,

which are published in the Proceedings of the California Academy of Natural Sciences, Vol. I, 1854-1857. This fish is taken in considerable numbers in the lower waters of the Sacramento and San Joaquin rivers in nets. It is sold by fishermen under the name of "chub," and has also, as we have said, been absurdly called "pike" by some of the fishermen. Indeed, this family of *Cyprinidæ* seems to be a favorite one with them for exercising their ingenuity in the misapplication of names. *Gila Grandis*, by far the finest fish of its family—the carp—once being (if they are not now) called salmon-trout; and *Lavinia Compressa*, following the same principles of nomenclature, they name (or did name) herring. As an article of food, none of these fishes are held in high estimation, and they are used chiefly by the Chinese. The size to which the *Gila Grandis* attains, its beauty of form, its vigor and activity, give it a place among our *Cyprinidæ* such as the salmon has among the trouts. They bite with great sharpness, and afford much sport to those piscatorially inclined. This species is also very abundant in the Sacramento and San Joaquin rivers and their tributaries, is likewise taken in nets, and sometimes brought in large quantities to this city. Those of twelve to sixteen pounds are very common. The largest we have seen in market was thirty inches in length.

Seven types, at least, of this family are brought to our markets, representing four genera. Of other smaller *Cyprinoids*, it is said by scientists that five or six California species have been already detected; but scarcely of sufficient size to be marketable, and beyond question may yet remain concealed in our lagoons, lakes, and mountain streams.

But to finish our piscatorial narrative on this bay-connected stream of Napa County. The tide rises in it about three miles above Napa City. It is beyond this tidal water that the best fishing is to be had. These carp or chub are mostly to be found and caught in the deepest holes at the foot of riffles, or the swiftest water. A rod of about fourteen or fifteen feet long is best, in order to command the middle of the river; although the fish are swimming in search of all kinds of food in all parts of the stream. A reel to either lengthen or shorten, a light but strong line, to which is attached a three-foot gut leader and a small hook, is desirable, although it is not absolutely necessary. The angler may use a float or not, according to fancy. The bait is a good-sized, common, brown earth-worm, found in wet places; not the brandling, frequently found in manure heaps, and which has a terribly unpleasant rank smell. We should have taken a larger number of these fish, and more brook-trout, had we been favored with some cloudy weather; but the summer was too far advanced for this comfort and advantage, and so what short time we did fish, we were exposed to the full rays of a hot sun, which never did agree with us. Where the most fish were, there happened always to be the fewest trees, and therefore the least shade. Occasionally, how much we longed for some of the Eastern cloudy days, even with now and then a smart shower of rain! And yet, with all this hot sun, when exposed to it, the weather during our stay was unusually cool for the season, with strong but fitful breezes blowing from our noble and extensive harbor.

On returning home from our day's amusement we sometimes left our mess of fish at the house of an old and in-

dustrious farmer and vigneron and his wife, of our acquaintance, who notwithstanding their comparatively inferior quality gladly welcomed them, the husband not having much time to devote to the piscatorial art. The objections to these carp are that they are rather bony, and their meat somewhat soft; but, properly cooked soon after their capture, their flesh is sweet and palatable.

Once, the tail-board of our wagon falling down, we lost altogether our basket, filled with fish, and did not find out our mishap until after we had reached our pleasant home at the Soda Springs.

LAKE SUPERIOR AND SAULT SAINT MARIE FISHING.

The principal fish of this region are trout and white-fish, which are among the finest varieties in the world, and are here found in their greatest perfection, only equaled perhaps by the salmon and trout as to sport, size and quality of meat, inhabiting the Sacramento and Cloud rivers in the northern part of California. Of the trout, the largest species of Lake Superior is called lake trout, salmon-trout, or Mackinaw salmon, (*salmon amethys-thinus*), and they vary from 10 to 60 pounds in weight. Their flesh is precisely similar to that of the salmon in appearance, but they are not as delicious as an article of food. The Indians take them in immense quantities with the gill-net, during the spring and summer, where the water is 100 feet deep; but in the fall, when the fish hover about the shores for the purpose of spawning, they catch them with the spear by torch-light. They also have a mode of taking them in the winter through the ice. After reaching the fishing ground, they cut a hole in the ice, over which they

erect a kind of wigwam or hut, and in which they seat themselves for action. They attach a piece of meat to a cord as bait, which they lower and pull up for the purpose of attracting the trout, thereby alluring the unsuspecting creature to the top of the hole, when they pick it out with a spear. An Indian has been known to catch a thousand weight in one day, in this manner. But as the ice of Lake Superior is seldom sufficient to become very thick, on account of the frequent storms, it sometimes happens that these solitary fishermen are borne away from the shore, and perish in the depths of the lake.

Our mode of fishing, when we visited this lake so splendid and renowned for its grand scenery, was with a hook. In casting along the shore some distance out in our canoe, we sometimes threw out 200 feet of line, to which was attached a stout hook and a piece of pork, and we seldom tried this experiment for an hour without catching a fifteen or twenty pounder. At other times, when the water was still, and we were in the mood, we have paddled to where the water was 50 feet deep, and with a drop-line have taken, in half an hour, more than we could eat in two weeks, and the greater part of which we distributed among our Indian companions.

A fish called Siskawitz, or northern lake trout (*salmo Siskawitz*) is more delicious than most species of trout, and is seldom found to weigh more than a dozen pounds. They are a very beautiful fish, peculiar to Lake Superior, and sometimes almost too fat to be palatable. Their habits are similar to those of the trout, and they are taken in the same manner.

But the fish of this region, and almost of the world, is the common trout, or lake trout (*salmo confinis*). The five rivers which empty into Lake Superior

on the north, and the thirty streams which run from the south, all abound in this superb fish, which vary from 10 to 40 ounces in weight. But the finest and choicest place for this universal favorite, in this lake region, is, without doubt, the Falls of Saint Marie. At this spot they are in season throughout the year, from which circumstances we are inclined to believe that there must be more than this one variety, which closely resemble each other. At one time you may fish all day and not capture a single specimen that will weigh over a pound, and at another time you may get almost a boat-load of them which will average from three to four pounds in weight. Our favorite mode of trouting at this place was to enter a canoe and cast anchor at the foot of the rapids, where the water was ten or fifteen feet deep, but owing to its marvelous clearness, like our own Tahoe, appeared to be about three, and where the bed of the river or straight was completely covered with snow-white rocks. We usually fished with a fly or artificial minnow, and were never disappointed in catching a fine assortment whenever we went out. Our favorite spot was about midway between the American and Canadian shores, and there we have spent whole days enjoying the rarest sport; now looking with wonder at the wall of foam between us and the mighty lake; now gazing upon the dreamy-looking and romantic scenery on either side and far below us; and anon peering into the clear water to watch the movements of the trout as they darted from the shady side of one rock to another, or leaped completely out of their native element to seize the hovering fly. We have taken trout in other parts of the United States, but have not seen a spot (the Cloud and Pitt Rivers may equal or exceed this in the

future), where they were so abundant as in this region; but we must acknowledge that there are streams in New England, New York, in Pennsylvania and in this State where we have thrown the fly with more intellectual enjoyment than in the river Saint Marie.

A NEOPHYTE AND SENSITIVE ANGLER ON WOR-R-RMS AND TROUTING.

Talking of trout. We emerged from the woods of Glenmary, we proceeded down a mile to a brook in the bed of a lone valley. Tying our horse to a hemlock, we started up the stream; and coming to a cold spring, my friend sat down to initiate me into the rudiments of preparing the fly for fishing. A very gay-coated specimen was selected and whipped upon the usual gut line of the finest description.

"What next?"

"Take a bit of a worm out of the tin bait-box, and cover with it the barb of the hook."

"I will. Stay! where are the bits? I see nothing here but full-length worms crawling about, every one with his compliment of extremities—not a tail astray."

"Bah! pull a bit off!"

"What! you don't mean that I am to pull one of these squirming unfortunates in two?"

"Certainly!"

"Well, come! that seems to me rather a liberty. I grant you my education in angling has been neglected, but, my dear friend, there is mercy in a guillotine. I had made up my mind to the death of the fish, but this preliminary horror!"—

"Come! don't be a woman!"

"I wish I were—I should then have a pair of scissors. Fancy having your leg *pulled off*, my good fellow. I say it is due to the poor devil that the op-

eration be as speedy as possible. Suppose your thumb slips?"

"Why, the worm being a cold blooded creature, feels little or nothing about it. Pain is all in your imagination."

"Stay! I'll do it for you—there!" What the remainder of the worm felt, I had no opportunity of observing, as my friend thrust the tin box into his pocket immediately; but the "bit" which he dropped into the palm of my hand, gave certainly every symptom of extreme astonishment by his wriggings at least. The passing of the barb of the hook three times through him, had at any rate the appearance of increasing his vitality, and looked at all events to me as little like happiness as anything I ever saw on any excursion of pleasure. Far be it from me to pretend more sensibility than Christopher North, or Izaak Walton. The latter had certainly his humanities in many respects; and Wilson, of all the men I have ever heard of, carried most marked in his fine face, from his likeness, the philter which bewitches affection. But, emulous as I am of their fame as anglers, and modest as I should feel about introducing innovations upon an art so refined (at least fly-fishing), I must for myself, a novitiate, venture until I get used to it, some less primitive instrument than thumb and finger, for the dismemberment of worms. I must take a knife or scissors.

I had never caught a trout in my life, and I do not remember at this moment ever having caught a fish of any genus or gender. My first lesson, of course, was to see the thing done. My friend stole up the bank of the stream, as if his tread would wake a lovely naiad, and threw his fly into a circling black pool, sparkling with brilliant bubbles, which coiled away from a small brook-leap in the shade.

The same instant the rod bent, and a glittering, spotted creature rose into the air, swung to his hand and was dropped into the basket. Another fling, and a small trail of the fly in the water, and another followed. With the third, I felt a curious uneasiness in my elbow, extending quickly to my wrist—the tingling of a new-born enthusiasm. My friend had taken up the stream, and, with his lips apart, and body bent over, like a mortal surprising some troop of fays at revel, it was not reasonable to expect him to remember his pupil. So, silently I turned down, and at the first pool threw in my fly. Something bright seemed borne at the instant under it, and the slight tilting pull upon the pole took me so much by surprise, that, for a second, I forgot to raise it. Up came the bright trout, raining the silver water from his back, and, at the second swing through the air (for I had not yet learned the sleight of the fisher to bring him quick to hand), he dropped into the pool, and was gone. I had already begun to take his part against myself, and detected a pleased thrill at his escape, venturing through my bosom. I sat down upon a prostrate pine to new-Shylock my poor worm. The tin box was in my friend's pocket! Come, here was a relief. As to the wildwood worms that might be dug from the pine, needless under my feet, I was incapable of violating their forest sanctuary. I would fish no more. I had had my pleasure. It is not like pulling up a stick or a stone, to pull up a resisting trout. I should like to be an angler very well, *but for the worm in my pocket.* [Let such, then, fish only with the artificial fly.—EDITOR.]

The brook ran and sang as merrily in the black shadow of the trees, as in the open sunshine; and the

wood-pecker played his sharp hammer on a tree ever green for centuries, as fearlessly as on a shivering poplar, that will be outlived by such a fish-catcher as I.

Selected Articles.

THE CULTURE OF HOUSE PLANTS.

At this season of the year a little care bestowed upon the treatment of house plants is better repaid in the future growth of the plants than at any other time. The soil for potting plants must be light. It may be lightened by mixing with coarse sand, such as builders use. The soil should not be pressed tightly about the plant roots, nor should the pot be quite filled with mould. There should always be drainage provided. For pots it is sufficient to well cover the bottom of the pot with small pieces of broken earthenware; but if boxes are used a layer an inch and a half deep of coarse cinders is excellent. This drainage is necessary to prevent the roots from rotting, and it follows that plants should never be watered from the flower-pot saucers. But very little water is necessary at this time of the year, nor should it be perceptibly warm. Slips or cuttings will start best in unusually dry soil, if the temperature is below 60° F., but if planted in coarse sand a liberal supply of water is necessary.

A very common error is to choose old wood for slips or cuttings, whereas the young green branches are the best. They should be planted deeply, and the surface of the soil should be kept loose. In watering wet the soil in the neighborhood of, but not close to, the cutting. Carnations and pinks are best obtained by layering; that is, the shoots are cut half or three-quarters through,

and bent so that the cut part may be covered about a half inch in the soil. In about three weeks the part cut will have thrown out roots when the cutting may be removed from the parent plant and potted by itself. Geranium slips are best obtained by cutting arms of young wood three-quarters of the way through, a distance of about two inches from the end of the shoot, and then allowing the partly severed slip to stand about a week or eight days on the parent plant before entirely severing it. Running plants are best propagated by pinning the arms down to the surface of the soil; this will cause them to take root as they spread. To cause plants to grow bushy pinch the eyes out of the ends of the longest branches, which will then throw out side shoots, and in this way a plant may be caused to grow almost any required shape.

If plants are infested with insects they may be effectually freed as follows: Place them upon a table or platform, on which there are two or three inches of sand, and cover them with a vessel of any kind, or place over them a cloth so arranged as to cover without damaging them. Beneath the vessel or cover insert some burning tobacco, and let it remain for ten or fifteen minutes. This is a much better plan than using tobacco water, because the smoke will permeate between the leaves, where it would be difficult to get the tobacco water; but if tobacco water is used it should be syringed between the leaves in all directions. If the soil is impregnated with insects, as is very often the case from the use of fertilizers, the very best remedy is to let the soil get dry and then cover it with chimney soot to a depth of about one-quarter of an inch, then apply water liberally. This will kill the insects without injuring the plants. Insects in the fertilizers are

very common and destructive for plants, and can only be guarded against with certainty by pouring boiling water on the soil, after well mixing the fertilizer in it. To prevent the destruction of seed by insects, it may be mixed, before sowing, with either powdered sulphur or soot, the latter being preferable.—*Scientific American*.

HINTS ON BEDDING-OUT PLANTS IN FRONT YARDS.

There are many villa residences in which the sole space available for flower gardening is the small fore-court garden, and in a neighborhood laid out in intersecting streets these are of varying aspects. Some open to the north, others to the south; some lost to the rising, others to the setting sun. According to the aspect and soil, so should be the nature of the bedding plants employed. If the situation be an open one, fully exposed to the sun and with but little shade, a pretty and durable bed might be formed of *Alternantheras*, *Pyrethrum*, *Golden Feather*, *Mesembryanthemum cordifolium variegatum*, *Sedums*, *Echeverias*, etc., after the fashion of what are known as embroidered beds. By using such things a little carefully, a pretty soft expressiveness can be secured, which is much to be preferred to a glare of scarlet, blue, and yellow; besides, such plants do well in a hot, dry position, and retain their freshness till quite late in the season. It is a style that is not common in villa gardens, and something can be said in favor of it from that point of view. If, as often happens in the case of a square or oblong fore-court garden, there is a bed or two cut out in the grass plot, there is generally also a narrow border running round the garden. Here there is a space for some

flowering plants, not arranged in formal lines, but mixed together so that the colors shall nicely blend, with the tallest plants kept behind, and the dwarfer ones in the foreground. We might have here the blue *Salvia patens*, yellow and dark *Calceolarias*, bedding *Pelargoniums* in variety, including of course some of the variegated and ornamental leaved section; *Stocks*, *Asters*, *Verbenas*, dwarf *Marigolds*, *Lobelias*, dwarf *Nasturtiums*, etc. Many other things will suggest themselves. From this border can be gathered during the summer many a handful of flowers for indoor requirements. In the case of a west aspect, that is yet open to the sun, some such arrangements might still be carried out. Gardens with either an east or north aspect are generally deprived of the sun pretty much, especially if there be trees above them, and the soil will be moist and cool. Provided there be sun enough to expand the flowers, the bedding plants named above will do; or *Pansies*, *Violas*, and subjects of this kind would be the best things to depend on. *Petunias* and *Phlox Drummondii* are likely to be serviceable also. If it be a cold and sunless spot, we would then treat it as we should a north aspect, and look to evergreen shrubs, *Ivy*, *Ferns*, etc., to be the decorative agents. There is something deliciously cool about such a spot on a hot summer's day; and in winter, when the ferns have died away, the evergreen character of other subjects still keeps up the aspect of a furnished garden.—*Michigan Farmer*.

THE FUCHSIA—PROPAGATION BY SLIPS.

For natural elegance and beauty, I know of no flower which equals the fuchsia. It is eminently the flower for amateurs, whether for summer or winter decoration. There is no flower of

equal pretensions so easy of culture and propagation, and so adapted to a widely diversified range of circumstances. In propagating, take your slips off with a heel, that is, pull them out where they branch out from the main stem, slipping, not cutting, them off. Have ready a box of very fine nice soil, composed of sand, garden soil and manure well rotted, or leaf mould, which is better, have it well mixed, plant the slips with two or more leaf joints under ground; water with luke-warm water, never let the soil get dry, and nearly every slip will grow. From April to October is the best time to slip. Many people complain that fuchsias are hard to start from slips without a heel; they should never be cut, but slipped off with a heel attached. Having started them, they will need attention as to training, which can be done in any manner to suit the fancy. A neat little trellis may be made or bought, over which they may be trained, or they may be made into neat little bushes by nipping out the centre shoot when a foot high, which causes side shoots to start, which should have their tops nipped out again when of proper height. If a window or greenhouse is not convenient for saving plants over winter, in October they may be taken up, the soil shaken off, and placed in a box of dry sawdust over winter.—W. C. L. DREW.

THINNING FRUIT.

The earlier this operation is performed, the better for the tree and for the specimens that remain. The only advantage in deferring it, is that the poorest, or those which are knotty or defective may be picked off, and the largest and fairest may be left to grow. Those who have not given this practice a trial erroneously suppose that it is at-

tended with great labor and expense. On the contrary, the labor is actually lessened. If a tree has a thousand specimens on it early in summer, and these are allowed to grow and ripen, one-half may require picking out to render the other half salable. The whole must therefore be carefully assorted after all have been hand-picked. It is much easier to strip off the half when one-tenth grown and with no careful handling. The scrubby ones taken out in autumn, have impeded the growth of the good ones; but if picked off in June, free growth is allowed to all the rest. It may not be that the proportion of poor specimens to be assorted out in autumn is equal to one-half; but the diminished size of the rest would be an equal loss. A neighbor removed, early in the season, two-thirds of the pears on a part of his trees of Louise Bonne of New Jersey; these gave as many bushels, from the increased size of the pears, as the unthinned trees; but still there were too many left, and he was satisfied it would have been better to have taken at least three-fourths. A successful peach-raiser obtained as many bushels from his trees after severe thinning as before, the peaches being so much larger as to make up in bulk difference in number, while the price received for the large and excellent specimens was triple that received from the small and poor fruit on crowded branches. Owners of orchards have often observed that the last peaches on a tree are finer in flavor than those which ripen first while the branches are crowded, the few days of ripening with ample space producing a striking difference in quality. Still greater would be the difference both in size and flavor if the ample room is given early in the season.

We need a system of experiments to determine accurately how much space

should be given for the different fruits. When, for instance, there is a full crop of peaches, they often touch each other. Let a number of trees or branches on the same tree be selected, and on one thin the peaches to four inches distance; on another to six inches; on another to nine inches, and on a fourth to a foot. When the fruit ripens, weigh and count the specimens, and observe their appearance and quality. Try similar experiments on apple, pear and plum trees. This may be very easily done, and it may give, by several repetitions, valuable information as to the result. It should be borne in mind that the fewer the number which are left on the tree, other things being equal, the less the tree will be injured by exhaustion, and it is not advisable to attempt therefore to get the largest number of bushels, but rather to preserve the health and vigor of the tree.—*Country Gentleman*.

SUMMER DIET.—All trustworthy hygienists and medical authorities are unanimous in recommending fruits and vegetables as the best and appropriate food for this season, and that the eating of much meat, rich gravies, etc., as carefully to be abstained from. And yet there is not one person in ten who carefully and intelligently follows this advice. In the hotels and boarding houses people gorge themselves with meats and gravies and pastry, and wonder how it is possible, after such a strengthening meal, that they feel so weak, and shaky, and nervous, and out of sorts! With nothing but bread and butter and some fruit for dinner the next day, the same person would have marveled still more how in the world such a slim meal gave him such strength and elasticity of spirits and improved health! Depend on it, a very large

proportion of the physical ills of life come from too much eating. There is but little danger of not eating enough. The trouble with nine-tenths of ailing and chronically complaining city people is injurious and intemperate eating. Leave off eating so much meat and greasy compounds and rich pastry, and try a simpler diet for a time, and, our word for it, you will soon experience a great and marvelous change come over the spirit of your dream.—*Trenton Gazette*.

FORCING PINKS.—A fragrant pink is always an acceptable flower, and it is always valued as a button-hole. There are not a great many varieties, but they include some very fine flowers, and they are certainly well deserving cultivation. One of the most striking and useful is a variety named *A. Alegatiere*, raised on the continent, which cultivators class with the tree or perpetual-flowering carnations, but which we are inclined to put in with pinks. It bears bright scarlet medium-sized flowers that are very freely produced. A dwarf variety named *coccinea* has very striking red flowers; but the dwarfiest of all is *Tom Thumb*, which is admirably adapted for growing in pots to secure early flowers. The other varieties are *Derby Day*, deep pink laced with bright red; *Lady Blanche*, pure white, very free and early; *Lord Lyon*, deep rosy purple, fine and distinct; *Mr. Pettifer*, dark centre with broad white edge; *Mrs. Moore*, pure white with dark centre; *Newmarket*, a reddish purple self, and *Rubens*, dark rosy purple.—*Land and Water*.

A SIMPLE INSECTICIDE.—The *Gardeners' Chronicle* has the following testimony from Mr. Knight, of Floors Castle Gardens, England, on the destruction of scale, etc., on plants. It is simply,

he says, to syringe plants infected with bug and scale with water diluted in the proportion of one wineglassful of paraffin oil to four gallons of water. The oil and water must be kept thoroughly mixed with the syringe—one charge into the can and one on the plant. He has used it with oranges, gardenias, crotons and many other plants which had bug and scale on them, and while it is said not to injure the young leaves in the least, it is certain death to the insects.

PROPAGATING AZALEAS BY SEED.—Azaleas are easily propagated by seeds, both hardy and tender kinds, only the tender ones require a little more nursing than the hardy kinds. The seeds are best sown in the spring, in boxes or pans, using sandy peat, which for the surface should be finely sifted. Having made the surface perfectly smooth (the seeds being small, they are easily smothered), and watered well, sow the seeds evenly and thinly; then gently press them in, and cover lightly with sandy soil. Place the boxes in some close, moist place; if they be the Indian varieties, a place where a gentle heat can be afforded them is necessary. Afterward inure to more light and air, to prevent damping off. When the seedlings are large enough to handle, prick them around the edges of 5 or 6 inch pots; shade and keep close until once they make fresh roots. When large enough to pot, put them into small pots, using peaty soil; keep them in a moist, growing heat, and shift into larger pots as their growth demands.

SPRING FLOWERING BULBS.—When crocus, hyacinths, narcissus, tulips, have done flowering, let the seed stalks be cut down, as the ripening of the seed severely taxes and exhausts the powers

of a plant. Some persons are accustomed, after the bulbs have flowered, to cut off the tops, as if to do the most mischief possible. The success of the next year's flowering will depend very much on the care given to the beds in the spring. Many bulbs, as the tulip, form entirely new bulbs; and others, as the hyacinth, form the flower bulb for the next season. The leaf is the indispensable means of doing this; in it are perfected the juices which are returned and deposited in the root. If the bed is left to be choked with weeds, and the bulbs thus robbed of nutriment, or if the soil is left compact, or if there is too much moisture, or, on the other hand, too little, the bud or bulb for the next year will be weakened. A very deep bed, or sandy soil, will sufficiently prevent the effects of too much water. The surface should be mellowed by the hand and thoroughly weeded. The most careful cultivators raise their bulbs every year, others every second or third year, while the careless let them alone and wonder why their bulbs do so poorly. When bulbs are raised it should not be done until the leaves are dry.

PRUNING FRUIT TREES.—Much butchery is committed by unskillful persons under the delusive idea that they are judiciously pruning. A young orchardist told us a few years since, with evident self-satisfaction, that in the thorough pruning he gave his apple trees the previous spring, he had cut off more than he had left on. Is it any wonder that the orchard refused to bear any considerable quantity of fruit for several years? A skillful pruner, by taking a glance at a young tree, can easily see what buds are to be removed and what should be left, and can prune it with his thumb nail so that the tree will require little more care for the season.

Trees managed in this way will have few large limbs requiring to be cut away. Sometimes a limb is cut off leaving a stump two or three inches long on the tree. Aside from the unsightly appearance, such a wound can never heal over. If it is necessary to remove a limb, it should be sawed off as closely as possible to the stem, and then smoothly trimmed off with a sharp knife or chisel.

Editorial Portfolio.

OUR FRONTISPIECE.

A CALIFORNIA PRIMROSE.

(*GENOTHERA WHITNEYI*.)

Our colored illustration this month is one of the most beautiful of the primrose family—a native of Humboldt County, and first brought to the attention of botanists in 1867. It was named *Whitneyi* for Prof. Whitney of the Geological Survey, it having been discovered by a member of the survey (Prof. Bolander) while engaged in the prosecution of that work.

The plant grows to a height of twelve to eighteen inches, with oblong, lanceolate leaves. It throws up numerous stalks, with a profusion of blossoms of various shades of crimson, more or less dark, according to exposure to the sun, fogs, or a clouded atmosphere; the best developed of which measure fully four inches across. The petals are heart-shaped, with apex downward, with a dark crimson blotch about the centre.

The accompanying picture shows a full-sized flower, and also a reduced outline exhibiting the habit of the plant. It grows on the low, hilly land in a dry, light soil, and so far as we are informed, has not been noticed outside of Humboldt County.

The flower has a subdued, delicate

odor, much like that of the more fragrant varieties of the lily family. It would no doubt form a most beautiful and valuable addition to our cultivated flowers, and might undoubtedly be greatly improved and rendered double by careful cultivation. Even in its wild, natural condition, few annual plants exceed it in beauty. The seeds should be sown soon after the first rains, so that they may have an abundance of time to take deep root, to support them through our dry summers. They show blossoms from May to September.

EVERLASTING OR PERENNIAL PEA.

Our friend Mr. Babcock, a great lover of flowers, and who cultivates a handsome garden and has a large conservatory almost in the heart of our metropolis, handed us, a short time since, a very handsome tress of this old (in Europe) and very beautiful climber. It is not by any means common in California, although florists have had it in their collection for some time and make it up in bouquets. Its color, a blending of pink and white, is very showy, yet sweetly delicate. It has no scent. In Vick's Illustrated Monthly for August there is a neat engraving of this very attractive flower. Mr. Vick says: "The Everlasting Pea is so called, not because it is everlasting in the sense that the *Gomphrena* and *Helichrysum* are everlastings, because the flowers are dry and do not fade, but on account of its perennial character, and in contradistinction to the Sweet Pea, which is an annual. It has always been a favorite of ours because it is so hardy, and seems to prosper best with the worst treatment. We have admired it hundreds of times, climbing over the walls and fences and porches of English cottages, and have

a favorite wild corner of our own where it grows among bushes and stones, monarch of all." A correspondent of the *Londou Garden* thus refers to this good old flower.

"The genus *Lathyrus* contains many beautiful plants, as the Sweet Pea, or the Posey Pea, as it is called by cottagers in many parts of England, bears evidence, and even the pretty little blue Tangier Pea must not be overlooked. *Lathyrus latifolius* is not a very happily named plant, but the specific name must not be taken in a comparative sense, as the leaves are not all broad. It is an old inhabitant of our gardens, and perhaps one of the hardiest and most easily cultivated plants in existence. Thriving as it does, almost anywhere, even in the court-yards, among flags and boulders, it may be made to ornament any dead, naked walls, for a few bits of it dibbled in among the stones under a wall will take care of themselves, as the long leathery roots penetrate to a great depth. The white variety of Everlasting Pea has come into notice during the last few years. Different colored kinds would look well planted together so as to form one mass. Such plants are peculiarly well adapted for wild, rough, stony places, rambling and scrambling over bushes and stones. Codling and tying and training only spoil them. Other Everlasting Peas, or *L. grandiflorus*, which is not so rambling in growth, but infinitely handsomer than *L. latifolius*; the stems are weaker, and the flowers twice the size. This I consider the handsomest of all. Another species, *L. rotundifolius*, is comparatively a lower-growing plant than any of the family, having some affinity to *L. latifolius*, but neater in habit, and excellent for stony banks. Another one, *L. pyrenaicus*, is the most rampant of the

family, growing twenty feet in a single season, and bearing a prodigious quantity of blossoms of a yellowish tint, veined with purple. This is a charming kind for running over trunks of dead trees and similar places.

THE HOPKINS MANSION ON "NOB HILL."

By the kind invitation of Mr. G. Nicholson, florist of Oakland, the intelligent and skilled superintending gardener of the grounds and the conservatories of this most costly and splendid place, we have lately visited the several interesting and attractive features of this very spacious and beautiful city residence. Among the handsomest and very conveniently built greenhouses, the one which most especially presented itself to our attention and excited our admiration, is a rockery house for ferns on the principle of a grotto, formed partly of natural rocks, and partly by an excellent imitation of them in both form and color. These rugged stones of a variety of shapes, obtained near San Pablo, are of a fine rich brownish color, and have been used a good deal in the foundation of the structure, and also in the formation of an elegantly formed hexagon temple, in the middle of which is a *jet d'eau*, and by an arrangement of the water power in the building, that element is made to flow at pleasure from its top all around its sides, and over its pillars. The back of this admirable imitation of a natural grotto and dripping springs or wells, the roof and all the other portions are formed of a very close and exact resemblance to the natural rock, both in its form, roughness and coloring, and there are pipes and open drains which are always kept full of water ready to overflow and drip in any required quantity at the option of the operator.

Of course the great quantity of warmth and moisture combined are capitally well suited for the health and luxuriance of the lovely and varied collection of the fern tribes of plants, mosses, lichens, etc., with which this splendid grotto is filled. The coloring here of these artificial rocks is a secret only known to Mr. Nicholson himself. The knowledge of it would be a valuable one to horticulturists and rockery builders.

Besides this unique and handsome fern conservatory, there are several other plant houses, one opposite the above, filled at present chiefly with the most choice, brilliant, and varied specimens of *Coleus*, or variegated leaved plants, another with some remarkably large show plants of the same kind, and tree ferns, opposite the reception room, another filled with many choice plants and flowers, together with a large ornamental tank for growing in it the famous native of the Amazon River—*Victoria Regia*—and lastly the large architecturally beautiful and imposing conservatory over the main entrance to the mansion.

Although from the outside the half block upon which this palatial structure is erected, appears to be very nearly all stone walks and terraces, still upon going inside of the grounds there are several good sized portions which are embellished by grass plots, ribbon beds of flowers, trailing plants, palms, and evergreens, etc., etc.

THE SOUTHERN CALIFORNIA HORTICULTURAL SOCIETY'S FAIR.

The prosperous manner in which this Southern institution is getting along, almost makes us envious of our southern friends, and creates a natural regret in those who are lovers of horti-

culture, that we, in the northern part of this coast, are comparatively so supine in this most attractive and valuable interest, and have allowed our kindred society here to become a dead letter. We are happy to observe, however, that our Mechanics' Institute is about to offer handsome premiums for flowers and fruits at the coming exhibition, and that will accomplish something important in this line; but this should have been the work of our Bay District Horticultural Society, had it continued its operations and not become virtually defunct. We have lately received photographs of the new pavilion of the Southern Horticultural Society which will be sufficiently completed for their horticultural fair to be held at Los Angeles at the same time as their agricultural exhibition. The elevation plans of the building are handsome, and will be an embellishment to the most beautiful and largest city, with its fine environs, in Southern California. With the intelligence, energy, and enterprise embarked in this entire movement for the improvement of horticulture in that section of our slope, there can hardly in the near future, be any doubt of its complete success. It has our most cordial wishes that this great cause of our southern brethren may achieve an entire triumph in that Eden-like portion of our highly favored and glorious State.

PACIFIC RURAL PRESS, PICTURES AND THANKS.

It is high time that we prominently, distinctively, and thankfully acknowledged the kindness and courtesy of the *Pacific Rural Press* in liberally bestowing on us the use for several months of electrotypes and engravings on wood of fruits, flowers and plants to illustrate and embellish the *HORTICULTURIST*.

These have for many years ornamented and made still more valuable the issues of that excellent, popular, and widely circulated agricultural paper of our coast—the *Press*; but by printing these cuts on fine paper and coloring them according to nature, we flatter ourselves we have much improved their appearance and so rendered them acceptable to the patrons of the *HORTICULTURIST*. We return our most sincere thanks to Messrs. Dewey & Co.

BOOKS AND PUBLICATIONS RECEIVED.

Every city in the United States, including our own, San Francisco, is annually invaded by professed florists, generally direct from Paris or its neighborhood, who hire some large and for the time being, vacant store, the walls of which they cover with the most preposterous and absurdly high-colored, and most gigantic likenesses (so-called) of trees, shrubs and flowers. Packages of seeds, too, they have, and bulbs labeled with the most loud and high-sounding names, and which according to their statements, will produce plants and flowers such as were never seen in any other country but “La Belle France.” These wonderful, brilliant and gorgeous pictures together with those of many handsome and immense specimens of well known fruits and ornamental trees and shrubs, (and many unknown) together with good samples of living plants and bulbs exhibited in and outside the store, naturally attract the public whether horticulturists or not. Those who know little or nothing about horticulture are naturally tempted to make an investment in these greatly promising rarities and marvels of the orchard and garden, and when the trees, shrubs, bulbs, and seeds in due time show what they are, are of course

doomed to sore disappointment and chagrin. We had one of these foreign florists on Market Street last fall, and we have often seen the same or similar gentlemen holding forth years ago, as they no doubt still do in Fourth Street, Cincinnati, when we resided near that city. But we were led to treat on this subject from having been favored by Mr. Roman, our prominent publisher here, with a copy of a work lately issued from the press having the quaint title of the “Rise and Fall of the Mustache and other Hawk-eyetems,” which in addition to a host of humorous, lively, spicy and entertaining articles, has one on the very subject we are now speaking about, entitled “The Garden of the Gods.” This relates to an innocent gentleman who fell a prey to, and was swindled by one of these French florists or traveling seed agents. The seeds and trees were duly planted in his garden. “Where the *abolutus paciedendus microbulus* was imbedded, he erected a large trestle directly for that impetuous climber to ascend and ramble over. And where he implanted the *discantaneum psstachinelensis psodium*, he reared a tall, straight stick for that towering mass of blossoms and foliage to shape itself against. He refused the most penetrating hints for a few seeds of the *bianthus geridian psotoliensis giasticus*, *floridens bilthus*, and the care and great gravity with which he earthed the gems of the *bibulus Burlingtonienseis giganteus*, brought tears into the eyes of the women. After manifold troubles, the garden came along beautifully, only the plants acted a little queer. The climber refused to climb, save in a horizontal position, but after its own way. He raised a jimson weed nine feet high and blossoms as big as inflated sun-flowers, so he let that stand, and argued with every

one who came along, that with sufficient care and proper cultivation (according to the French promises), it would develop into a valuable fruit-bearing tree. As for the *abolutus paciedendus microbulus*, as soon as he became morally and botanically certain that it was just chickweed, he one night secretly pulled it up and threw it away."

"There were other plants in the garden of the gods that came up and grew to maturity, and brought forth blossoms each after his kind, but as they turned out to be various species of rag-weed and dog fennel, they were not considered worthy of mention. But he is disheartened (and no wonder,) with scientific gardening, and he only lives now for one object, to ascertain whether these Latin names are really the scientific names of those plants which they set forth, or he was swindled by these traveling agents."

Here is a piece of poetry from this witty volume entitled, "The Seedsman" [of Market Street.]

How does the busy nurseryman
Improve each shining hour;
And offer cions, sprouts and seeds
Of every shrub and flower.

How busily he wags his chin,
How neat he spreads his store,
And sells us things that never grew,
And won't grow any more.

Who showed the wily man the way
To sell the ladies seed?
Who taught him how to blow and lie
And coax and beg and plead?

He taught himself, the nurseryman;
And when his day is done,
We'll plant him where the lank rag-weeds
Will flutter in the sun.

But oh, although we plant him deep
Beneath the Buttercup,
He's so much like the seed he sells,
He never will come up.

The work is for sale at Roman's,
Montgomery Street, San Francisco.

Sheep Husbandry in the South, by John L. Hayes, Secretary of the National Association of Wool Manufacturers, Boston, 1878.

The Western New York Horticultural Society Proceedings of the 23d Annual Meeting, held at Rochester, N. Y. 1878.

Report of the progress and condition of the Botanic Gardens and Government Plantations during the year 1877. Dr. R. Schomburgk, Director, Adelaide, 1878.

HEDGE PLANTS.

The Jujube tree, *Ziziphus vulgaris*, will form a good protective hedge south of the thirty-eighth degree of latitude. It is of rapid growth, thorny branches, and pinnate foliage of a bright, glossy green color. As a lawn tree it is exceedingly beautiful, particularly when covered with fruits, which are profusely produced. The cherry-like fruit is of a dull red color when ripe, and is used for economic purposes in some parts of the world, but it is not of much value as an article of food.

The Chinese tea-plant will make a good ornamental evergreen hedge when the climate is favorable to its growth. The periodical clippings required to keep it in proper trim could be saved, dried and utilized. The experiment is worthy of trial, if for no other purpose than to ascertain whether or not this would prove to be a profitable method of gathering the young shoots and leaves for tea, as seems highly profitable from the large surface of uniform growths which frequent clippings would produce.

The evergreen *Euonymus*, *Euonymus Japonicus*, also forms an admirable ornamental hedge. The plant is easily grown from cuttings of dense growth naturally, but little care is requisite to keep it in good condition.

In the season good fresh tea-seed can be procured of B. F. Wellington, Importer and Dealer in Seeds, 425 Washington Street, San Francisco.

Messrs. Kittle & Co., proprietors of the Pacific Oil and Lead Works of this city, are now prepared to purchase Flaxseed and Castor Beans in quantities at current rates.

CULTIVATION OF FRUIT AND REPORT ON THE FRUIT AND VEGETABLE MARKET.

It has been discovered by all experienced cultivators of fruit trees in this State that it is best to train their trees low, the lower limbs being mostly within a foot or two of the ground. All kinds of fruit trees are operated on on the same principle. According to Mr. Hittell in his excellent standard work on "The Resources of California," men here do not walk under the trees in an orchard, or climb after the fruit. It would be as absurd to try to walk under or to climb a bearing apple tree in California as to walk under or climb a gooseberry bush. One fruit tree in a hundred may be trained high, not more. The advantages of low training are, that the trees bear fruit earlier—a matter of the greatest importance here, where the interest of money is so high compared with European countries, and the price of fruit rapidly falling from year to year, and the first fruits of the season always commanding the largest price; the trunk is shaded from the great heat of the sun in this climate and protected against the disease called the sun-scald, and which precaution does not even save them from this in some unusually hot spells; by this plan, also, the earth about the roots is kept moist, and the trees are protected against the wind.

The trees should be planted from one-sixth to one-half nearer together in the orchards than in the Eastern States. This is an additional protection against sun and wind. The ground assiduously ploughed several times every summer, and kept clean; whereas in the Eastern orchards it is common to sow grass or cultivate vegetables. Some of the Eastern insects are beginning to make their appearance here, and in a few instances have been destructive. The nest caterpillar especially has made ravages in some orchards, but this should not be, as with a little industry it can be so easily destroyed. The borer is commencing to be the worst trouble with us. The phylloxera has not been so much of a pest as was anticipated, from the terrible scourge it has been in France and other countries across the Atlantic.

There is no doubt that all fruit trees commence to bear at about half the age at which they produce in Europe.

Apple-trees are usually planted here from 12 to 30 feet apart, 14 or 16 being the more common distances. Our apple trees come into bearing in the third year. They make a wonderfully quick growth in our soil and climate. People need not be loath to plant fruit trees, as with proper care they are generally long-lived.

We far excel the East in several kinds of fruit, as the Apricot, Nectarine, Plum, Fig, Cherry, Orange, Melons, and foreign Grapes, with some of the semi-tropical fruits.

Cuttings for new vineyards should be taken from vines not less than four years old, and should be planted from January to March. It is not usual to plough more than once before planting, but several ploughings are better. The vines should be planted either six and a half or eight feet apart each way; the

former distance gives 1,000 vines to the acre, the latter giving 680 vines to the acre. They are planted about two feet deep, perpendicularly, leaving about three or four inches with two buds above the surface. The holes are usually made with a crowbar, and after the vine is thrust down into it, a little loose sand or pulverized dirt is poured in to fill up the hole. Sometimes holes are dug with the spade unless the ground is very moist. The newly-planted vineyard is irrigated; for the vine, when taking root, likes water. During the first year after planting, the vine-grower has nothing to do save to irrigate twice, to plough several times, and to hoe down such weeds as can not be reached with the plough.

There is very little growth of wood the first year, but it frequently happens that cuttings bear grapes—one bunch, it may be, to a dozen vines. Rooted vines do not bear the first year. The next year the ground should be kept loose and clean by ploughing and hoeing twice or thrice; any suckers springing out from buds beneath the surface must be broken off, and a little pruning be done. In pruning regard is had to the form which the stalk is to have.

The vine bears fruit on new wood; that is, on twigs produced in the same season with the grape. All the twigs are cut off every year, leaving a bare stalk. In the old vineyards the stalks are from three to five feet high. Of late the more general custom is to make the stalks about 15 inches high. It is observed that the nearer the grapes are to the ground, the earlier they ripen, and the less liable they are to injury from frost and wind. The strongest shoot is selected to make the stalk, and it is tied to a little stake stuck into the ground at its side, and the other shoots are cut off. It is a matter of import-

ance to use the stake so that the vines may grow straight up. Vineyards planted with cuttings bear no grapes the second year; those planted with rooted vines may bear a few. In the southern part of the State the vineyard must be irrigated at least twice every summer; in many localities in the northern and middle districts, irrigation is considered unnecessary, though it would undoubtedly be beneficial during the first year.

The third year the ploughing and hoeing is the same as the second. More attention must be given the pruning. All the twigs are cut off save two or three which sprout from the top of the stalk, and these are pruned so as to leave but two buds on each, which are to produce all the wood and fruit of the season. This year the vines should produce three or four pounds of grapes each; some vineyards have averaged 12 pounds to the stalk the third year.

The fourth year the five or six twigs starting from the top of the stalk are left with two eyes each; and this year the yield should be 6 or 8 pounds per vine.

The fifth year, there should be seven or eight twigs, with two eyes each, and the grape-yield should be ten pounds per vine. The sixth year, the vine is in full growth, and there should be eight or ten twigs, from ten to fifteen pounds of fruit per vine. About the fortieth year the vine begins to decay. After the third or fourth year, if the vine has been well trained, it needs no stake for support, but stands alone.

All the month of July fruits and vegetables were plentiful and cheap. Blackberries were of good quality especially. As a whole, the fruit crop this year is as good as the average for the past few years, notwithstanding that in some portions of the State the

heavy floods of last winter did considerable damage.

The prices, generally, ruled low. A few Watermelons and Cantaloups came in early in the month and became tolerably plentiful at the end.

The *Commercial Herald* reports about the 18th of last month (July). Our market continues to be copiously supplied with Peaches, Blackberries, Figs, Plums, and other seasonable kinds. From Sacramento on the 8th inst. M. T. Brewer & Co. shipped by express train to the East two car-loads of Bartlett Pears, the first large shipment of the season, and also a few Plums and other fruit. One car-load goes to New York, and the other to Chicago. Tulare county will raise a large fruit crop this year. Several kinds have ripened here in advance to other places, and the orchards in all parts of the valley and in the foothills are reported to be heavily loaded. There are few climates better for fruit than ours. All kinds, both temperate and semi-tropical, can be raised here successfully and with profit. The berry crop of the State is enormous, and of the very best quality. The Cherry crop has proved a failure on the overflowed lands, though very good elsewhere. The Peach trees have in many places suffered from curled leaf, losing both the leaf and the fruit. The Almond crop will be very large, except in a few localities in southern California. Raisin making will be extensively carried on this season. The saving by curing and canning of fruit this year will amount to thousands of dollars, and yet hundreds of tons of fine Blackberries are being wasted on account of low prices. The native Mission Grape in Los Angeles will not be a success this season; the foreign vines are, however, bearing heavy crops. Quotations are as follows: Peach Plum, 75c. to

\$1; Washington, 75c. to \$1; Royal, 75c. to \$1; Strawberry, \$1 to \$1.25. Apples—Early Harvest, 50c. to 75c. per box; Red June, 75c. to \$1. Red Astrican, 75c. to \$1. Pears—Griffith, 75c. to \$1; Bloodgood, \$1 to \$1.25; Dearborn Seedling, \$1 to \$1.25; Bartlett, \$2 to \$2.50; Purple Duane, 50c. to 75c. Peaches—Tilotsen, 50c. to 75c.; Crawford, 90c. to \$1.25; Haleo Early, 75c. to \$1.25. Apricots, 2½c. to 4c. per lb. Strawberries, \$2.50 to \$4 per chest. Raspberries, 7c. to 9c. per lb. Blackberries, 4c. to 6c. per lb. Currants, 5c. to 6c. Figs—White, 1c. to 3c. per lb.; Black, 2c. to 3c. per lb. Oranges—Tahiti, \$15 to \$20 per M. Lemons—Sicily, \$9 to \$10 per box; Los Angeles, \$15 to \$20 per M. Limes, \$9 to \$10 per box. Bananas, \$1.50 to \$2.50 per bunch. Pineapples, \$5 to \$6 per doz. Cocoanuts, \$5 to \$6 per 100. Watermelons, \$2.50 per doz. Cantaloups, \$1.50 to \$2.50 per doz. Grapes, Sweetwater, 5c. to 8c. per lb. Dried Fruit—Apples, 5c. to 6c. per lb.; Peaches, 8c. to 10c. per lb.—peeled, 20c.; Pears, 5c. to 8c. per lb.; Plums, pitted, 15c. to 18c.; Blackberries, 15c.; Figs, white, 6c. to 8c.; black, 3c. to 5c.; California Raisins, \$1 to \$2.50 per box. We observed about the middle of July some large English Gooseberries and Black Currants.

At the latter end of last month (July), there was an immense influx in the market of Peaches; from 500 to 1,000 baskets arrived daily. In consequence the canning business was brisk, this fruit being as low in many instances as 35 cents and a little higher when the quality was better. The rather unusual coolness of the weather this spring and summer near the coast as well as in the city much deminished the sale of every kind of fruit. Indeed all sales of fruit for family use have been and still con-

tinue, compared with former seasons, very dull. All kinds of Plums, with which California is so much favored, there being no insect here to injure or destroy them, are very plentiful and cheap. Apples and Pears are excellent in quality, and very abundant. Blackberries and Strawberries continue in abundance and at rather low prices. Grapes are fast coming in but from the almost glut of other kinds of fruit but these, consumption is at present much curtailed by other fruits. Canteloups and Watermelons are coming in by the wagon loads, and are correspondingly reasonable in price. Large cargoes of Oranges arrive in great heaps from the Society Islands. But their chance for profitable sale is slim on account of a plethoric market in every description of Pomona's products. They, in fact, reached here too late for a prosperous disposal of them. The vast quantities of fruit on the stalls, especially, of those suitable for packing, enable our canners to put up large supplies. Our California Canned Goods have a good reputation abroad, and we are glad to see that the export trade in these goods is steadily augmenting. Sicily Lemons continue to reach us in considerable quantities via New York in good order, but they are slow of sale at low prices. These come into competition with the large local supply of Berries, Peaches, Apricots, Cherries, etc. The following rates for canned goods approximate those now ruling in jobbing lots: Eastern Oysters, \$1.50 to \$2.50; Clams, \$3; Lobsters, \$3.25; Turkey, \$3.87½; Chicken, \$3.87½; Eastern Green Corn, \$2.40; Pineapples, \$2.50; California Table Fruits, \$3.25; Pie Fruit, 2½-lb, \$2.25; do, gall, \$7; Blackberries, \$3.25; Table Peaches, \$3.25; Jams and Jellies, \$3.50; Green Peas, \$2.50; String Beans, \$1.75; Tomatoes, \$1.40 to \$1.50 per doz. 2½-lb

tins; do, gall-tins, \$5.50; Gherkins, ½-gall jars, \$3.15; do, qts, \$2.25; Mixed Pickles, ½-gall, \$3.15; do, qts, \$2.25 per doz.; Pickles in bbls., per gall., 37½c.; do, in hf bbls, do, 40c.; do, 10-gall kegs, per keg, \$3.37½; do, 5 do do, \$1.80; do, 3, do \$1.57½; Mixed Pickles, bbls, per gall, 37½c.; do do 5 gall do, \$1.75; do do 3 do do, \$1.57; Canned Beef, 2½-lb. tins, \$4 per doz.: 4-lb. cans, \$7 per doz.; 6-lb. cans, \$10 per doz.; Boiled Beef, 6-lb. cans, 10c. per lb.; Broiled Mutton, 6-lb. cans, 12½c. per lb.; special rates on goods for export.

Editorial Gleanings.

HIDE-BOUND TREES.

The practice of slitting the outer bark of fruit trees perpendicularly has its friends and enemies. We are of the latter. It deals with the effect instead of the cause. The cambium layer is that from which a zone (in exogenous plants) is annually added both to the sap-wood and to the inner bark. The outer bark is finally exfoliated or rent in fissures and scaled off by the weather. Trees that are starved increase in growth slowly and the outer bark becomes so indurated as to resist, to a certain extent, their growth by retarding the upward passage of the crude sap from the root to the leaves and of the elaborated sap from the leaves downward. But we think it may be questioned whether it is not well that its growth should be retarded. Surely if it is true that a tree becomes "hide-bound" because it is starved, increasing its size is not going to remedy the evil since we do but furnish more mouths, so to speak, to be fed by the same amount of food.

We have seen many trees thus treated. The stems would noticeably increase in size the next year or so, but there was

no corresponding evidence of vigor apparent. In most instances it has seemed to us their vigor was impaired. These perpendicular slits, moreover, afford convenient lodgements for water or moisture, and insects seek such crevices for shelter or for depositing their eggs. It seems to us that the natural remedy for hide-bound trees is to enrich the earth as far as the roots extend, and that then the cambium layer, increased in quantity and nutriment, will so form new liber and alburnum that the outer bark must expand and the stem soon become evenly and sufficiently developed.

(The above excellent and very true ideas from the *Rural New Yorker* are in accordance with natural laws and worthy special attention of all orchardists.)

A WASTE OF LIMES.—Hundreds of thousands of limes are going to waste in this country for the want of a paying market to send them to. The majority of our limes are large, thin-skinned and bursting with juice, and no limes superior to those we are now raising are produced anywhere. The worst feature of the tremendous waste which is now going on is that it is altogether unnecessary. There is a market all over the world for lime juice, and our redundant limes ought to be converted into that valuable article of commerce. A lime-juice factory would pay well here if it were started by the proper parties. A very small capital would be sufficient to procure the necessary presses, and when the owners of trees knew they could sell their limes at even a trifling rate per thousand, they would have them gathered by boys, whose labor could be thus utilized. The French have a secret in their great industrial economy which accounts for their great thrift.

They never allow anything to go to waste. Many things that other people would throw away they utilize and render a source of wealth. We could copy that saving people in this respect greatly to our advantage.

GERANIUMS.—Commend us to a little conservatory, or deep window of these admirable plants, clustering into splendid hues, more and more profusely and perfect day by day, one variety emulating another, all remarkable for fine habits of structure throughout. They are no longer straggling in growth, but have become perfect, compact little shrubs, crowned through the florist's skill with incomparable bloom. The clusters often hold from forty to sixty flowers in an umbel. These may be in tufts and rosettes of petals, orange, red, dark scarlet, salmon, etc., in the double flowering, or smooth heads of superb velvet in the single varieties, each distinct floret an inch in circumference. Add to this the rich robing of their foliage, zoned, or tri-colored—belted and mingled with bronzes, crimsons, touches of white indented with rose—margined with golden yellow, or silvery feathering amid their soft, thick green—and what plant is such a bouquet of beauty? —*Country Gentleman*.

THE GINGER PLANT.—From practical experiment it is now being demonstrated that the ginger plant, so extensively cultivated in China, can be successfully and profitably propagated on any of the moist lands of California. The *Santa Clara Echo* says that Dr. Saxe has now some thrifty specimens in his garden, which have been reared without any extraordinary care or attention. The plant resembles the cornstalk in size and appearance, but unlike the corn, yields a blossom. The root is used for

preserves and pickles, and is said to make a very palatable dish. From the root is also extracted the world-renowned and valuable drug known as Jamaica Ginger.

THE ART OF MANURING.—This rule should be observed in planting trees, shrubs and vines. Place no manure in contact with the roots. Many persons think they are doing a nice thing for their trees to sprinkle manure among their roots in the process of planting, but instead they do harm. If you put the manure above the roots when the holes are nearly filled, so that when the dirt is replaced it will be fairly covered, good will result from the application. Cow manure or well-rotted stable manure is used with success. To prevent injury from severe frost, and also to benefit the trees by enriching the ground, coarse manure, containing considerable straw, may be spread over the ground, rather thick, around the stem or trunks, as far as the roots extend.

SANITARY EFFECTS OF TREES.—Trees, generally, when interposed between dwellings and swamp lands, have been known to exercise a purifying influence upon the atmosphere, and are consequently conducive to the health of those occupying such tree-protected dwellings. About thirty years ago Gorukpore, in northwestern India, was considered a healthy place. A mango grove was cut down, and the miasmatic vapors from the neighboring wet land, finding no obstruction, made the place a fatal one to Europeans. The grove was again permitted to grow and the salubrity of the station was restored. The planting of a belt of babool trees at Fettehpoor converted a pestiferous statim into one where the death rate is about the average.

ALMOND CULTURE.—There are few conditions of climate and soil requisite for the successful culture of almonds, which do not appear to be generally understood, though so very simple and easy when pointed out. All those familiar with the almond tree seem to know that there is no tree which will thrive so well with so little moisture. Very few persons, however, seem to be aware of the fact that this dryness of the soil is a necessary condition to make the tree a successful bearer. An almond tree is inclined to hold its leaves very late in the fall and even into the winter. Sometimes, indeed, old leaves, new leaves, and blossoms will be seen on one tree. Not one tree in a thousand will bear more than a handful of almonds the following year after holding its leaves thus late in the fall. Trees dropping their leaves early in the season, even though they have made a large growth of branches, will be pretty sure of being loaded with almonds the following year, especially if there are no early frosts to injure the terminal wood buds and prevent the new growth of wood from thoroughly maturing. All those who irrigate almond trees at any other season than in the winter will not find them profitable trees to raise. The dry foothill soil, together with the entire freedom from frosts in that region, excepting a few very light frosts late in the spring, is perfectly adapted to almond culture, as those who have experimented can show. In that locality are now several thousand bearing trees, and the crop gives promise of an abundant and profitable yield.—*San Jose Mercury, July 25th.*

THE EARLY ROSE POTATO.—This is the most popular potato in California. It is more generally raised and forms the best variety in all kinds of soils and in

all shades of California climates. One of the peculiarities of this potato is that the tubers grow on the vine above where it puts out from the seed, while most other kinds send out the tubers from small fibrous roots that strike down into the soil. To this peculiarity the Early Rose undoubtedly owes much of its value and success in our warm and dry climate. Other potatoes, or other varieties succeed well in localities, but the Early Rose is a success as an early potato all over the State. Even on the high wheat-growing plains, every farmer may raise his own potatoes for consumption most of the year, if he will plant the Early Rose in season for them to come to maturity before the very hot and dry season sets in, and farmers on the river bottoms and low lands can raise two crops each year. The seed for the second crop, of course, must be grown the same season they are planted, and to insure a crop from such seed they have to be treated in a peculiar manner. If planted immediately after digging, the seed is not sure to rot in the ground before growing. They should be allowed to remain out of the ground from three to four weeks, so as to dry out some of the natural juices. A direct exposure to the sun is not advisable, as they will dry too rapidly, but if spread on the ground under the partial shadow of a tree, or upon the floor of a barn or other open building for a few weeks, they will be most sure to grow.

MOSS BASKET.—One of the prettiest of parlor ornaments is made thus: Select the smallest wicker basket you can find at the florist's or fancy goods store; a package of French moss; a bunch of mixed *immortelles* and a few dainty shells. Cut the basket in two; sew the half to a piece of card board,

sufficiently large to allow a good margin for framing. Now, in filling it with moss, you want to carry out the idea that it is brim full and running over. Select the most delicate mosses and flowers, and arrange them to trail out and over the basket as fantastically as you please. The moss for the inside should be sewed on the board, when this is done, arrange the flowers with regard to the blending of colors, not in huge bunches, but singly, unless they are very small. Mix in your shells and fragments of coral, if you have them, and you will have quite an ornamental bit of work.

EXHIBITION OF CALIFORNIA RAISINS AT PARIS.—I neglected to mention in my last letter that the California raisins have been especially approved. I have noticed two exhibits, one by R. B. Blower, of Woodland, and one by George A. Deitz, of Sacramento.—*Correspondent.*

METEOROLOGICAL RECORD.

FOR THE MONTH ENDING JULY 31st, 1878.

(Prepared for THE HORTICULTURIST by THOS. TENNENT, Mathematical Instrument and Chronometer-maker, No. 18 Market Street.)

BAROMETER.

Mean height at 9 A. M.	30.01 in.
do 12 M.	30.01
do 3 P. M.	30.00
do 6 P. M.	30.00
Highest point on the 13th at 12 M.	30.06
Lowest point on the 1st at 9 A. M.	29.91

THERMOMETER.

(With north exposure and free from reflected heat.)

Mean height during the night	63°
do 12 M.	68°
do 3 P. M.	67°
do 6 P. M.	61°
Highest point on the 12th at 12 M.	78°
Lowest point on the 31st at 9 A. M.	57°

SELF-REGISTERING THERMOMETER.

Mean height during the night	52°
Highest point at sunrise on the 4th	58°
Lowest point at sunrise on the 31st	49°

WINDS.

South-west on 6 days; west on 25 days.

WEATHER.

Clear on 11 days; cloudy on 3 days; variable on 17 days.

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17th	0.01
Total	0.01



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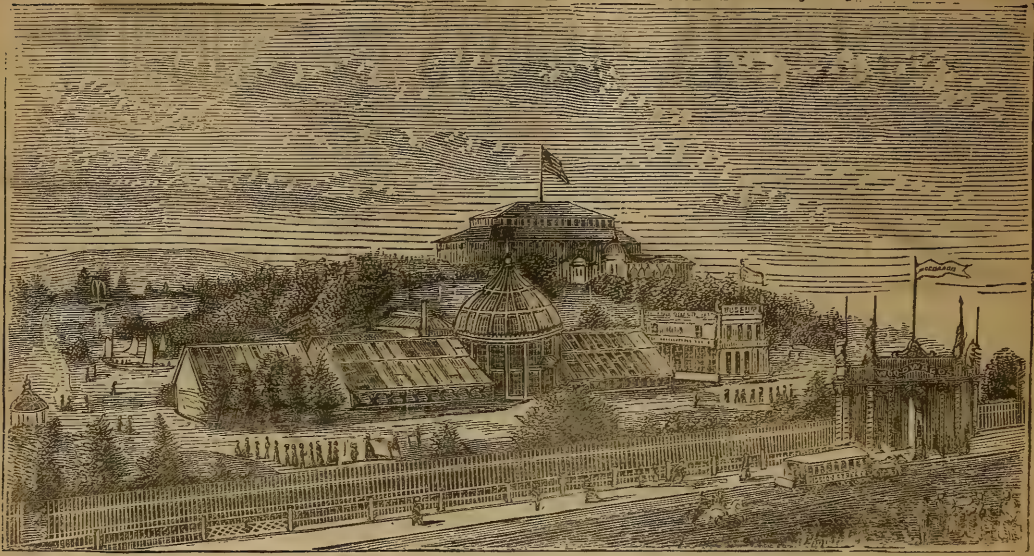
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VOL. VIII.

SAN FRANCISCO, SEPTEMBER, 1878.

No. 9.

HOUSE CULTURE OF BULBS.

BY W. C. L. DREW.

As the time draws nigh for the planting of Holland bulbs, we should begin to make our arrangements and complete our plans for their reception and future growth. In California it is equally desirable as in the East to force a few at least in the house. No one who cares for house plants should fail to procure and force a few for early winter. Their hardiness, together with their exquisite beauty in form and color, delicious fragrance and free growing qualities, make them better adapted for house culture than almost any other class of plants. Bulbs are so much more expensive than seeds, that we can overlook the rarity of their culture in the garden; but as it takes only a few for house decoration the expense will come within the reach of any one, and there is therefore no reasonable excuse to be made for the exclusion of bulbs from the window garden. The most popular bulbs for house culture are the Hyacinth, Tulip, Narcissus, and Crocus; and they require so little care and bloom so well that when once cultivated they will never be given up. But to

force bulbs into bloom in winter requires a peculiar treatment, and this must be adhered to to make success certain. The following treatment we give as being simple, practical and satisfactory in its results.

IN POTS.—The hardy bulbs will grow in almost any light sandy soil, but to cultivate them most successfully, they should be planted in a mixture composed of one half decomposed turfy loam, with the remainder equal portions of well rotted manure, leaf mould and fine sand well incorporated together. The pots used for single bulbs should be about five inches in diameter; some prefer to plant two, three, or five bulbs in pots of proportionate size, which, to say the least, will produce a fine display. In potting each bulb should remain one half above the surface of the soil. When thus planted, water them well to imbed the bulbs firmly within the soil; after potting, place them in a cool, dark place, so as to encourage a strong development of roots, before the bulb starts at the top, for on this depends the future development of the plant. This may be done by burying the pots to the depth of five or six inches in the open ground for six weeks; or they

may be placed in a cool cellar, covering the pots with five or six inches of sand. Remove them from such situation as soon as the roots reach the bottom of the pot. When the pots are brought from the bed or cellar, keep them shaded until the leaves get green; then place them on the shelf in the conservatory or in the parlor window. They will need moderate watering until they begin to grow, when water should be freely given, and an abundance of air in mild weather.

IN GLASS.—The bulbs should be placed so that only the base of each should touch the water. No part of the bulb should be submerged. Then remove them to a cool dark place. When the glasses are moderately filled with roots, which will be in from two to four weeks, they should be exposed to the light and air as much as possible. The water should be changed every ten days, or if a small lump of charcoal be placed in the glass it will not be necessary to change the water so frequently. Never use well or spring water if you can get clear rain water. Care should be taken that they are not exposed to frost as it not only injures the fibres but frequently breaks the glass. I have found it beneficial to use a few drops of ammonia in the water; about six drops to a quart will be sufficient.

IN MOSS.—The Hyacinth will grow in pots, vases, etc., filled with fresh moss, as well as in water or earth. Place the moss loosely in the pot or vase, on which plant the Hyacinth, covering the bulb with the moss, then moisten the whole, which should be repeated two to three times weekly. Narcissus, Duc Van Thol Tulips and Crocus may be treated the same way.

It is well to give the Crocus as much air as possible in the first stages of their growth, by placing them outside

of the window when there is no danger of frost.

IN SAND.—Take a china bowl, glass dish, vase, or in fact anything of an ornamental character capable of containing moisture, and fill with white sand in the shape of a pyramid. In the centre plant a Hyacinth, and at equal distances around the sides three or more, filling up the open space with Crocus and Duc Van Thol Tulips. In planting the bulbs should be submerged in the sand, allowing only the tops to be seen. The dish or vase should then be submerged in clean water for five minutes. Repeat the bath weekly. Place in a dark place for a fortnight then give plenty of air.

THE CUPHEA.

BY W. C. L. DREW.

One of the most interesting and beautiful plants for house decoration, or for the garden border, is the Cuphea Platycentra. It thrives remarkably well in any soil and is a constant and profuse bloomer. The leaves are of a rich, dark green hue, neatly veined; the flowers are of a clear red or scarlet color, tipped with black and white. From the shape and peculiar coloring of the flower this elegant plant has been denominated the cigar plant, although its brilliancy and beauty combine to command a more elegant name. The plant, under good culture, grows several feet high, with a branching and somewhat loose head, but by proper treatment, in the way of pruning and pinching back, it can easily be made to assume a round and compact form, and form a dense mass of green and scarlet, in which state it will remain quiet throughout the year. The flowers are axillary, that is a flower is borne at each axil; a single flower will remain in bloom

until concealed by the growth of the foliage.

The Cuphea is recommended for hanging baskets, and as a centre plant, owing to its profuseness of bloom, we are of the opinion that it would be quite appropriate, but as it is not of a drooping nature it should not be expected to overhang the border, and some other suitable subject should be planted for this purpose, leaving the Cuphea to fill the centre and furnish the blooms.

The Cuphea is perpetuated mostly by cuttings, but young plants may be raised from fresh seed, but as probably one flower out of a hundred produces seed, and these very often do not come to perfection, it is seldom practiced among professionals. The most certain and probably the best way, is for amateurs to propagate by layering, thus: having made an upward slit half way through one or more of the lower branches, bend them down and bury the slit portion in the soil, placing a small flag or stone immediately over the slit; they should not be separated from the parent plant; in from two to four weeks roots will have formed at the slit, when the young plant may be removed from the parent and become an individual plant. It has often been an object of wonder to us that a plant possessing so many merits as the Cuphea should not be oftener described in the florists' catalogues, and it is seldom offered even by the most extensive houses.

REPORT OF FRUIT FROM CALIFORNIA.

BY DR. J. STRENTZEL.

(Concluded.)

In 1776, the number of chests of Strawberries (chiefly the *Longworth Prolific*), sold from April 1st to November 1st, were 18,904 chests. In 1877

the crop was several thousand chests larger—steady, moderate price.

[This year (1878), the number of chests sold are not likely to fall short of 1877, although the crop is said to be not so heavy, but then there has been more land planted with them since 1876.—EDITOR.]

Our advance in Orange culture furnishes an instance of the energy and enterprise of our people. The impression prevailed in 1850 that oranges could be grown in a few favored spots around Los Angeles, the San Gabriel Mission being the centre thus favored by public opinion. Orange groves began to cover this favored country, greatly assisted by the indomitable zeal of S. A. Garey, under whose leadership the raising and propagation of choice varieties of the *Citrus* increased annually to many hundred thousands in the nursery. In 1876-7 there were received in San Francisco 7,395,790 Los Angeles and San Gabriel oranges, and 521,390 lemons. Over 40,000 boxes of raisins were cured in 1876, and the product in many instances compared favorably with the best imported, but owing to the reluctance of leading merchants to patronize the home article, the venture was then unprofitable to the producer.

The trade in other fruits is in so many hands, the shipments reaching San Francisco by multitudinous avenues, that it is impossible to gather accurate data of its extent; and it is still more difficult to make any estimate of the amount of fruit consumed in the State. Much of it goes to waste, and a great deal is fed to stock—sugary, delicious grapes thrown before swine. For these reasons a comparison of the ruling prices when the work of the horticulturist began in earnest, with the prices obtained for fruit to-day, furnishes a bet-

ter criterion of the advance since made. Thus in 1852, apples sold as high as \$1 to \$1.25 per box of 45 lbs.; to-day, one-half to three-fourths of a cent per pound.

Peaches, \$1 to \$2 apiece are now 50 cents to \$1 per basket.

Pears of the *Pound* variety, hard and insipid, sold at \$5 apiece; to-day, 25c to \$1 for a fifty-pound box of the most luscious.

Cherries, \$3 to \$5 per pound, now 8 to 20 cents.

Native Strawberries sold by the dozen for a piece that coated them with gold-dust, and all other fruits in proportion.

Despite the great risk and the exorbitant freight charges, which on a car load of 20,000 pounds to New York, were \$1,175 for fast time, \$675 for slow; to Chicago, \$800 fast time, \$500 slow, there were last year (1876), shipped east 334 car loads, viz.: 143 from Sacramento, 168 from San Jose, and 23 from Marysville. Preparations are being made for an increased business this year (1877), using mostly refrigerator cars for perishable fruits. [Such business was carried largely into effect and will be also in this year.—EDITOR.]

Notwithstanding the disadvantages of fruit raising in 1877, owing to a dry, hot season, the early fruits were abundant and of good quality. The first cherries came to market on the 12th of April. About the 20th of April the height of strawberry season was reached, the arrivals aggregating from 600 to 750 chests daily, selling at \$5 to \$9 per chest. In June with decreased supply, they sold at \$12 to \$15, declining in August to \$5 to \$6 per chest. Some of most extraordinary size were of the *Monarch of the West* variety, grown by C. M. Silver & Son. The *Alpine Ever-bearing* proved itself deserving that name in the care of a successful cultiva-

tor near Santa Cruz. The *Longworth Prolific* is a very leading variety cultivated in California every where.

Apricots were undersized and scarce, the crop evidently having been injured by the premature development of the fruit buds.

Almonds are small, and in some places an entire failure.

Grapes.—An average crop.

Apples and Plums.—About one-sixth of an average.

Cherries.—Two-thirds of an average.

Pears.—Bartletts, two-thirds; other varieties, twenty-five per cent. over average.

Quinces.—An average crop.

Peaches.—Full average; deficient in size.

Blackberries and Raspberries.—Half a crop.

Currants and Gooseberries.—Almost an entire failure.

We have been not only able to furnish our own population for a score of years with the most delicious and acceptable fruits at a minimum price, but have shipped abroad, even to China and Japan, of our superabundance, besides supplying our immediate neighbors in the States of Nevada, Oregon and Mexico; and further than this, we continue in a lively desire to furnish raisins for every pudding in the land, nuts for every urchin, and to distribute all semi-tropical fruits with our golden apples of the *Hesperides* to the northern-most ends of the earth.

[This year, in comparison with last, all our fruits are in immense abundance, owing to copious rains in the winter and spring, and there being but few late frosts.—EDITOR.]

Judge Hatch caused about 2,000 Mississippi catfish to be put in the Sacramento River at Colusa.

LINARIA CYMBALARIA.

BY W. C. L. DREW.

The *Linaria Cymbalaria*, or as it is more popularly known, the Kenilworth Ivy, is one of our most desirable basket plants. It is altogether of a drooping nature, and nothing is better adapted for growing in hanging pots or baskets, or around the edge of vases, or, in fact, in any position where a drooping plant is required. The flower is very pretty in color, it is white, marked with purple and orange, and somewhat resembles the Snapdragon in shape. If you press it gently between your thumb and finger it will open and close as though endowed with life; botanically speaking, it has five petals, and a labiate, gameo petalous personate corolla. The leaves are reniform crenate.

The plant always delights in a deep soil and shady situation. A little morning sun will be of advantage to it, but the noon day sun must be excluded, if you would have it thrive and look well. Like most all other plants, it is fond of light, and if you have it growing in a basket in the window do not forget to turn it every day or two, so that the whole plant may enjoy the light alike, and thus a uniform growth of the branches is preserved. More seeds can be procured from a plant of the Kenilworth Ivy when given a bearable portion of the sun, than if grown in the shade, and this is doubtless one cause of the unhealthy appearance of the plant when grown in the sun, and if left to continue seeding it will eventually die from over work in producing seed.

This handsome plant is becoming more and more popular every year, as people become acquainted with its nature and habits, and understand how

to properly treat it. Through time it will, in all probability, work into favor with all who cultivate flowers, and be an indispensable requisite in every home.

Many persons desire a plant for growing in a northern window. This plant will give more satisfaction than anything I am aware of. To such I would say, you will have no reason to complain of its beauty and growth if treated properly in other respects.

El Dorado, Cal.

VERBENA.—No low-growing flower can alone compete with the verbena for producing a continuous show of bloom throughout the season, provided it is properly grown; yet it is seldom seen in perfection. Formerly there was no question about it; all one had to do was to strike the cuttings, and set out the young plants in almost any kind of soil, and a beautiful show of flowers would reward him. Not so now, as the rust, etc., will inevitably spoil all, unless the greatest care is exercised. [There is very little rust in California.—Ed.] Never allow a verbena to "stand still;" keep it constantly growing. Use only healthy shoots for propagation, and as soon as rooted, pot off at once in light fibrous loam. They do not relish a strong heat, but succeed best in a cool atmosphere. An English authority recommends watering exclusively with tobacco water, which he affirms will destroy all manner of insects as well as rust. Place the plants always near the glass, and as soon as the roots show signs of being pot-bound, shift them into a size larger. Select for your beds a new, turfy loam—they will not grow thriftily nor bloom satisfactorily in old garden soil; water during a dry time, and if your varieties are well selected, your bed will be a constant feast.—*N. Y. Tribune.*

BULBS FOR THE FLOWER GARDEN.

BY W. C. L. DREW.

ERANTHIS.—In quick succession after the snowdrop, the earliest of vernal flowering bulbs, we find the *Eranthis hyemalis* in full bloom, with its wealth of golden blossoms. This is one of the prettiest as well as the hardiest of the dwarf spring bloomers, thriving in any and all situations. It is one of the most valuable plants we have. In many situations the Snowdrop and Crocus will fail entirely, while in all such places the *Eranthis* can be planted with the certainty of a liberal reward of flowers. It is of a very dwarf habit; but for massing or bordering beds it is splendid. A small bed planted very thickly—and whenever it is used it should be planted closely—will be one of the most attractive plots in a garden. The flowers are a very bright yellow and can be seen from quite a distance. The *Eranthis* is known as the Winter Aconite.

IXIAS.—The *Ixia*, belonging to the large family of the Iridæ or Cape Irids, is one of the most showy and brilliant of bulbous flowers in cultivation. In the Northern States they have to be grown in the house or conservatory; in the Southern States and in California, they grow in the open border with as little care as the *Gladioli*.

In planting, in the two latter climates, having selected a situation with a southern aspect, where the land is a light sandy loam, make the soil rich by the addition of well-decayed stable manure, well incorporated; plant the bulbs in rows, having the rows ten inches apart. The bulbs should be set four inches apart in the rows; they may be set closer but they will not develop as well. Plant them two and a half inches deep,

making the soil firm around them. Water must be given freely when the flower buds appear; and, until after the buds and flowers are fully developed, the soil must not be suffered to get dry. If these directions are followed the *Ixia* will give to the planter more satisfaction than a Lily.

In potting the *Ixia*, the same general treatment will be found satisfactory in all climates.

Six-inch pots, containing five bulbs, will give the best satisfaction. The bulbs should be planted during October and November, that a succession may be maintained for many weeks. Fill the pots as follows: Place in the bottom for drainage, a piece of potsherd, laying over it an inch of coarse charcoal, then an inch of common sandy soil, over which an inch of well-decayed stable manure should be placed; then fill up the pot with equal portions of sand and leaf-mold or very light, rich loam. Plant the bulbs an inch deep in the pots, the soil being well pressed around them. Water freely and set the pots in a dark but warm situation.

After the plants appear above the soil, remove to the window or conservatory. They should be watered freely when coming into bloom and a few days before the blossoms open, water with weak liquid manure. The flowers of the *Ixia* are very pretty and curious, nearly all the varieties having two or more colors represented in each flower.

During the last few years, the *Ixia* has undergone such wonderful changes in the hands of European cultivators that its old character has been entirely changed. The new hybrids are characterized by very large, numerous and highly-colored flowers, which have only to be seen to be fully appreciated.

OXALIS.—Flowers of this kind are very popular for winter flowering in

pots, but they are no less desirable for border culture. The bulbs of all the varieties are small, but produce an abundance of bloom and foliage, the latter being almost as handsome and in every way as desirable as the many-colored flowers.

As I shall not speak of these bulbs again, I will for the benefit of amateurs, give the most approved plan for potting them. Bulbs desired for pot culture should be kept strictly for that purpose and not to be made to do extra service by occupying a position in the border during the spring and summer seasons. In potting the *Oxalis*, five or six bulbs may be planted in a six-inch pot. This should be done as early as possible in October or November.

Having clean pots ready, place an inch of drainage in the bottom; then fill the pots half way up with well-decayed manure; the rest of the pot should be filled with fresh light loam or leaf mold; in this plant the bulbs one inch deep; water and set in a cool, dark place for ten days, when the pot should be brought to the light. After flowering, when the foliage begins to turn yellow, they should be dried off. When dry, transplant the bulbs into pots of fresh soil and let them remain until the following October, when they will again start into growth.

For border culture, there are few more desirable subjects than the *Oxalis*, and those who plant it for its summer-blooming qualities will be more than satisfied with the result. During the entire season it will thrive and bloom, being continually covered with its pretty flowers.

In cultivating the flower for this purpose, set the bulbs one inch deep in the soil, which should be light and rich; for, while it will flower in a common poor soil, no plant will better repay a

little extra care in the way of a good dressing of well-decayed manure—no rank manure must be used, as it injures the flowering of the bulb. In the autumn, the bulbs must be taken up, dried off, and packed in fine sawdust. They should be kept in a cool, dry place until the following spring, when they may be planted as before.

VARIETIES.

O. VERSICOLOR.—This is one of the most desirable varieties for winter-blooming. The bulbs of this variety are very small. The flowers are handsomely variegated, with ground-color being a pure white with an eye of the brightest yellow bordered with crimson.

O. BOWIEL.—This also is a winter-blooming variety, and makes a fine contrast with the former. The flowers are of a bright rosy pink color.

O. LUTEA.—This variety is sure to give satisfaction in window culture, as it never fails to bloom. The flowers are a rich yellow color.

O. FLORIBUNDA ALBA.—This is the best white flowering variety. It adapts itself to pot or border culture, and should be in every collection.

O. DEPPEL.—This is the best of the summer-blooming varieties. The leaves are quite distinct from those of other varieties; they are of a very bright green color, with a distinct brownish-black zone. The variety is frequently called the four-leaved *Oxalis*.

O. LASIANDRA.—This is one of the finest plants for edging purposes. The flowers are a rosy purple color, remaining open only while the sun shines. The leaves are in nine different divisions. In Eastern gardens this is rapidly taking the place of other border plants.

Ohio raises 15,000,000 bushels of apples from 381,000 acres of orchards.



Rod and Gun.

FLY-FISHING.

SOME SPECIMENS OF SPORT IN THAT DIRECTION.

We need scarcely remark that to become an adept in this particular branch requires a very considerable amount not only of manual skill and dexterity, but of scientific knowledge of the habits and instincts of the fish the angler is pursuing, and of the different insects whose imitations lure them to destruction. Judgment, also, is required in their selection and use, and this is only to be gained by practice and experience, and a close and keen observation. We do not, by any means, regard that man as entitled to the designation of a sportsman—whether he be a shooter, a fisher, or a deer-hunter—who merely prides himself upon the quantity of birds, fish or deer he can manage to kill.

It is different, however, with the scientific angler. He would glory much more in taking half a dozen fish in difficult water and weather, where the best efforts of the pot-hunter or fisherman were of no avail, by the exercise of superior judgment in using a fly proper for the season and water, than in capturing long strings of fish in some remote river or lake on the frontiers, where the hungry fish will voraciously gulp down anything having the size and shape of an insect, live or artificial.

And it is not only in shy waters, and in unfavorable weather for the sport, and where the fish are coy and difficult to take, that the superiority of the accomplished fisher over the ignorant pretender, is fairly exhibited. Our own opinion most decidedly compels us to arrive at the conclusion that, unless the artificial flies resemble as closely their natural prototypes frequenting the waters at the season fished in, as the art of the dresser can make them, the angler may, generally, as well stay at home and whip the imaginary whales in his washstand basin—though this remark will apply rather to preserved waters, where the fish are well fed, than to common well-stocked wild streams of this country, far from cities. As Roosevelt (*nom de plume* Barnwell) remarks in his book on “The Game Fish of the North:”

“The first and most striking difference to be observed between the two systems of fly-fishing in Great Britain and America, is the comparative size of the flies, those of Europe following the natural insect, being smaller, and, probably, for a similar reason, gaudier. It is a remarkable fact that the most gaudy of all, the scarlet ibis, is prominently successful alone in the streams of Long Island and of the British Provinces. In our mountain streams the fish are exceedingly numerous, though small, and will eagerly seize any fly

presented to them, vieing with one another to be first. Black bass flies are generally made with a red body, gold twist, and wings of ibis and white or black and white, or peacock's herl and white. In salmon fishing it is customary to use but one fly, as two sixteen-pound fish would be troublesome to handle; but, occasionally, a dropper is added at the upper end of the casting line to attract their attention. Three flies, at most, are sufficient for trout-fishing, and are desirable, although frequently failing to hook the fish, in consequence of lying on or close to the leader.

"This is, in a measure, prevented by short, stiff, gut lengths; but, when the rises are mainly at the upper flies, many will be missed."

This, we think, is, in the main correct; but on this Coast, rather plain-colored flies seem to do best. To all those who love the rod and the line and its various methods, we will now, for the remainder of this article, present the readers of the HORTICULTURIST with some fly-fishing exploits in England of the brother of the writer. One, the capture of a big trout (*salmo fario*); the other, the taking of seventeen fine trout, in about three hours, in the river Bean, a tributary of the Lea. As to the first, viz., the big trout, the following account of it will be somewhat interesting and amusing to all anglers for its unparalleled strangeness. Our brother relates this extraordinary achievement in the following words:

"On the 11th instant (July), I succeeded in killing a third fine trout, seven and a half pounds, at Field's Weir on the Lea River [he had previously taken a seven and a quarter pound trout at Ware Mill with an alder fly, and a seven and three-quarter one at Tewin Water with a 'quill gnat']; this

time with a black palmer, ribbed silver. But the manner in which this last capture was effected was so remarkable that I feel sure a short description of it will prove interesting to my brother anglers. On Tuesday afternoon, the 9th instant, I walked down to the river, 'tackled' out for chub, and, as I was strolling along, I pointed out to my daughter, who was with me, a whirling eddy, caused by a rapid from a flood gate, saying, 'that is just the spot where I should expect to find trout, if there were any left in this part of the water,' at the same time taking a somewhat careless cast over the particular spot.

"The fly had no sooner dropped on the water than it was seized by a big fish, which was so unexpected, and took me so completely by surprise, that I was wholly unprepared for the rush; the consequence was that the line 'came to grief,' and off Mr. Trout went with about a yard of my gut collar, greatly to my chagrin and disgust. Well, on Wednesday I had to be in London all day, but on Thursday, the 11th, I resolved to visit the scene of my Tuesday's disaster, and try to retrieve my loss, if happily I might have the good fortune to find my old friend 'at home,' and with a *rising* appetite. This time I took especial care to be duly prepared at all points. Cautiously approaching the spot, therefore, I first took a cast with a good-sized alder fly, but without success. I then spun over the eddy with a small brass 'kill-devil,' still no response. 'Well,' said I to my daughter, who again accompanied me, 'I fear it is 'no go,' but I will have one more spin as a forlorn hope.'

"'I have him,' I exclaimed, and with a mighty rush, which made the reel shriek again, the fish was across the pool. I felt, however, I had him, hard and fast. He fought gallantly for a

full quarter of an hour; but at last he rolled and rolled, and rolled into the landing-net, when he was grasped in triumph. On proceeding to remove, as I thought, the flight of hooks, what was my astonishment at finding that the fish had not taken the spinning bait at all, but that in drawing it over the spot where he lay, the triangles had caught hold of the gut collar, which had broken on Tuesday, and by their rapid rotatory motion had twisted the gut so tightly round the spinner as to defy all the efforts of the fish to 'untwist the twist,' and thus it was that I captured my old friend with the very fly he had robbed me of two days before, and which, of course, I found firmly fixed in his jaw." We will complete the narrative in our next issue.

OUR WILD PIGEON.

During a visit which I made some time since to the Big Tree Grove of Calaveras, in my usual excursions with my gun in the pine forests, among several kinds of game (such as our California quail and wood-grouse, with some large pine squirrels) I sometimes met with and shot wild-pigeons as well as the common dove. It was among what are called the foothills of the Sierras, whose snow-mantled serrated range was frequently visible from the forest openings and high ridges. This fine bird—the wood-pigeon—is remarkable for its beauty of form, which is oval, with a pointed tail. It is thus, no doubt, admirably constructed for flight as well as for rapid changes of position in flight. It passes through the woods with the rapidity of a lightning flash. It is within the bounds of the field of vision for a moment, and the next has apparently disappeared. The unerring exactness with which it

would thus swiftly wing its way through the tortuous limbs and foliage of the giants of the woodlands around us in those vast forests was almost miraculous. But even if the sportsman or mountain hunter has an eye to the beautiful, which we trust we have, he regards this bird as a trophy of his skill, or as a welcome addition to the larder; for its flesh is, though dark, particularly rich and juicy when fat and young, and reminded us, when we were so fortunate as to stop one in his rapid flight, of years long passed on a farm which we once possessed back of Newport, Kentucky, when these birds (a species, of course, of the California genus), some fall seasons, would pass over or settle near our house in countless thousands, the victims of our gun; and which, when in good order, and not too old, furnished most delicious fare for ourself and family.

The breast and throat of the California male bird varies from a reddish-brown to a purple. The rest of the body is chiefly blue or of a blueish shade, with back and sides of the neck of a splendid variety of brilliant colors—gold, green, and crimson; more vivid and beautiful, we think, than the Eastern bird. The bird of this Coast lives on berries and the edible pine nuts, and has a peculiar fondness for the red berries of the madrona—a variety of the strawberry tree (*Arbutus Menziesii*), which abounds so much, as we all know, in many portions of our slope, intermingled with the pines and red-woods, or cedar forests, and the manzanitas. These birds breed in the tallest trees, where sometimes a community of what we may term a hundred families may be found. They are migratory and gregarious, but the largest flocks in this country seldom exceed hundreds; whereas, those of the Eastern regions

of the United States are found, as is generally known, in thousands, darkening the atmosphere as they pass the field of vision. There was, we remember, some years ago, a pigeon-roost up the Licking River, in Kentucky, and we can call to mind one year, when at a high stage of water the Newport ferry-boat carried up a large party of shooters (not exactly sportsmen), among whom we were, to invade these birds quarters or roosts by torch-light, when thousands of them were slaughtered (for we can term it nothing else), although there fell on the same night a severe November storm of snow.

Selected Articles.

POND LILY.

BY LOUISE W. TILDEN.

Pond Lily lay on the breast of the water,
Lazily dreaming the hours away ;
Watching the wavelets that, circling about her,
Widened far out o'er the beautiful bay.

Onward a bright little Ripple came rolling,
Crested with diamonds that glittered and
shone ;

In for a frolic, the gay little fellow,
Laughing and leaping and full of his fun.

Pond Lily saw little Ripple advancing,
Covered all o'er with glittering pelf,
"Give me some diamonds ! oh, give me some
diamonds !"

She cried ; "make me shining and bright
like yourself !"

"Look out, then, Lily ! I'm coming ! I'm com-
ing !

Catch them !" he cried, as he tossed them in
air ;

There sat Pond Lily, with jewels bespangled,
Gemming her gown and her bright yellow
hair.

Down in the depths of the mirror-like water,
Gazing with rapture and swelling with pride,
"Ah me, how lovely ! how wondrously lovely !
Sure I'm the Queen of the Lilies !" she
cried.

Tossing her silly head higher and higher,
All her fair sisters now viewed with disdain,
"I am far better than you are," she murmured,
And turned to her own bright reflection
again.

Up came old "Sol," a wise, steady old fellow,
The world's overseer this many a year ;
Going his rounds in a business-like manner,
Looking about him to see and to hear.

Presently little Pond Lily espying,
Thinking of naught but her looks, it was
plain,

"Ha !" muttered he, "what's this nonsense, I
wonder !

All those 'fine fixins' are making her vain."

Thousands of bright little beams were in wait-
ing,

Ready his royal command to obey.

"Go you," said he, "to yon foolish young
Lily,

Take all those frivolous baubles away."

Swifter than arrows they sped on their errand,
Gathered the jewels ere she was aware ;

Left poor Pond Lily, all shorn of her splendor,
Sitting forlorn in a sullen despair.

—Golden Hours.

THE PECAN.

The editor of *Our Home Journal* says he knows of several pecan orchards not far from the city of New Orleans, which yield to their fortunate owners decidedly handsome returns for the little time and labor necessarily devoted to their care. The tree, he says, flourishes in all the Gulf States, and, if properly cultivated, can be made a source of considerable revenue. He goes on to state that the pecan is as hardy as an oak, and that it may be grown in every locality climatically adapted to it, capable of producing a growth of any of the ordinary hard woods. It is usually propagated from seed, and our contemporary advises us to select for planting the largest obtainable nuts from the thin-shelled variety, as these are more valuable in any market than the thick, hard-shelled kind. At two or three years of age transplant to the place

where the tree is to grow, and prune so as to obtain a liberal spread of branches rather than extreme height, which is always an objectionable feature in the tree. To accomplish this purpose the trees should be planted forty or fifty feet apart each way, cultivating between the rows with garden truck, or by growing peach, fig, or pear trees till the entire space is needed for the pecan—the “fillers,” if trees of some kind, can then be cut out.

A pecan tree, according to the writer under mention, will, if favorably circumstanced, begin bearing at ten years from the seed. At 15 years it will pay its owner considerable annual profit. At 20 years it may be considered in full bearing. It will continue to do so for generations, there being no known limit to its capacities in this direction. It lives to a very great age. All of which we can vouch for as correct. And, yet, strange as it may seem, very few indeed are there among our people who are at all concerning themselves about the culture of the pecan. They go on worrying their heads about the olive, and the almond, and the English walnut, and the Brazil nut and scores of other doubtful or impossible products; but passing, as unworthy of their notice, the pecan, a native perfectly at home in every respect, and entirely as profitable as any of the others. Isn't it amazing? But such is the way of the world—it is simply a case of the prophet without praise in his own country. If the pecan, possessing all of its peculiar merits, was a native of central Africa say—a new discovery and importation by the explorer, Stanley—and we had a fifty acre nursery set to the young trees, we would want no better fortune. The whole South would be after the young trees, taking them off like hot cakes at our own figures; and, at the same time,

each purchaser doing a good thing for himself no doubt. But no, the tree is indigenous. It grows wild all along the Mississippi Valley, from the gulf to a point 100 miles above St. Louis; it grows wild in Texas; it is only a common wild tree, and therefore nobody wants it. True, there is a great demand for its fruit, and owing to the rapid destruction of the wild trees now going on, that demand is swiftly increasing. But no matter. What if pecans are to-day worth more per pound than almonds. Who cares? Who wants to brush up his lands with wild trees? Don't you know the almond has a history? It originated over in the Old World! It is the parent of the peach! It was known to and appreciated by the ancients!—all of which afford us lively food for thought as we toiled constantly in our orchard, renewing the trees every ten or fifteen years, gouging them every year after the peach borer and jarring them throughout the proper season for the plum curculio; for every insect that disturbs the peach is equally at home on the almond. But the commonplace old pecan, lifting its great, leafy arms far above us to wave the same long after we have been laid in our graves, laughing to scorn any insect that might be foolish enough to plan an attack upon it, showering down year after year its harvest of valuable nuts, and asking nothing at our hands save the trouble of gathering them up and sending them to a sure market—nobody wants anything to do with it, because it is “so very common!” Surely that must be the only reason. It has no romantic history.—*Mobile Register*.

AN INN IN JAPAN.

The certainty of having a pleasant resting-place after the toil and trouble

of the day is one of the charms of pedestrianism in Japan. The "Pied Bulls" and "Red Lions" of our English highways make no pretense whatever to anything beyond the mere satisfying of the animal wants. How very different it is in Japan! From the moment the threshold is crossed to the moment of departure the visitor is the object of unceasing solicitude on the part of every one connected with the establishment from highest to lowest. If it is midday, and he has arrived hot, dusty and a little tired, after a long morning's tramp, the whole force of the establishment ushers the visitor into a pretty, light apartment, looking on to one of those marvelous miniature gardens, in which, covering a space of a few feet, the mountains, woods, rivers and floods of an entire province are represented. By one neatly-dressed, pleasant-looking damsel his boots are taken off and his feet bathed in hot water, a second fans him and keeps up a voluble patter of conversation, a third on her knees offers him refreshing tea and sweetmeats, while the host himself with another detachment of waitresses is helping the coolies to unpack the box containing the European food. Everything that meets the eye is contrived to please it. There are pleasant rustic paintings on the screens. There are vases with flowers dotted about; from the woodwork outside are suspended gayly colored lanterns, or festoons of glass through which the wind makes a soothing music, so that by the time the traveler has finished his repast, has smoked a pipe, and perhaps drank a cup of "Saki" with the host, he feels thoroughly refreshed and in capital humor to resume his journey. All this enjoyment is procured at a merely nominal cost, and the present of some bread or European liquor to the house at leaving

brings out the whole establishment, who say "Sayonara"—that is "good-bye"—with their foreheads on the mats.
—*Belgravia*.

FRUITS IN DISEASES.

A writer in the *Herald of Health* makes a strong statement regarding the use of ripe fruit in diseases. We can not say it is not true and yet we should apply the "fruit cure" with some precautions. He says: "There is scarcely a disease to which the human family is heir, but the sufferings therefrom would be greatly relieved by the use of the very fruits which are now so strictly forbidden. Further, many of these diseases would be conducted to a safe termination under the free use of fruits, because of the acids they contain. When our troops were fighting the Seminoles in Florida, many sick with diarrhoea and dysentery cured those diseases by stealing from the hospitals into the fields and eating fruits, blackberries especially. Since our very pleasant and profitable excursion of last month, I have sent several children, suffering with cholera infantum and with dysentery, to the peach orchard, with most gratifying results—and where they could not be carried to the orchard to pick and eat the fruit fresh from the trees, I have had the little sufferers fed with sound fruit with equally good results. In typhoid fever, in the treatment of which such extraordinary care is enjoined as regards diet, fruits are not only highly grateful to the patient, but even work very favorable results. A physician who had been sick some weeks with typhoid fever, says his diarrhoea was cured by peaches." He says: "I first ate the first half of a large peach, and feeling no ill effects, I ate the other half, and then one or two more, and

the next day as many as I desired." He adds: "My bowels got better at once, and my recovery was rapid." Since our last meeting, a typhoid fever patient, who had been about three weeks sick, and though imploring, was allowed no diet but beef tea or milk punch, came under my care for a few days. I immediately ordered the free use of peaches and grapes, and the diarrhoea at once ceased, and at the end of five days, when I relinquished the care of her, she was convalescent. My impression is, the disease runs a shorter and more favorable course under the free use of fruits than under the usual method of treatment, and I think the use of stimulants rarely required when fruits are freely used. In the treatment of scarlet fever and diphtheria, our summer fruits and many of the vegetables are most useful, and to the best may be added some, or, in fact, any foreign fruits. There is scarcely a disease accompanied with fever, but grapes and bananas may be freely given to the patient. In the treatment of dysentery, I would greatly prefer ripe, sound fruits, peaches especially, to any medicine that can be suggested."

THE OLIVE.

This tree when once planted, is planted practically forever. Some trees in Europe still in bearing, from the record of the tax-rolls, are known to be older than 400 years. It stands neglect and abuse, but repays neglect by only bearing in alternate years. In the south of France by cultivation and pruning it bears every year. It can be propagated from cuttings of the branches or roots, from layers, from suckers, from the little knots of excrescences that form on the tree near the ground, called by the Italians *vovoli*, and from seeds in the

fruit. When the latter are used the pulp should be removed from the ripe olive, and the seeds soaked for twenty-four hours in strong lye, to soften them. They should be planted in a sheltered place, and the ground occasionally watered. Planted in this State in February, the young trees would make their appearance in July. The tree can be grafted or budded in every method used on the apple or pear.

It commences bearing in six years, but does not come to the limit of full fruitage for twenty five or thirty years. The average product from each tree is stated at from ten to fifteen pounds of oil. When planted for an orchard, the trees are placed fifteen or twenty feet from each other. Pruning increases the product, and causes the tree to yield annually, as like the grape, it bears fruit upon the wood of the preceding year. Cultivation of the ground is not essential, but it increases the product. After the thousands of years that the olive has been cultivated, a few varieties have been selected for abundance of fruit and superiority in quality, as also for fineness of flavor in the oil produced. Where young trees are raised from the seeds, they are invariably budded or grafted from some of these well-known varieties, as the chances are very remote that from a thousand seedlings one would be found of equal value to those now cultivated. About thirty different kinds are grown in France and Italy.

This tree will grow in almost any soil except that containing much moisture. Marsh states "that it prefers a light warm ground, but does not thrive in rich alluvial land, and grows well on hilly and rocky surfaces." Bernay says, "that it thrives and is most prolific in dry calcareous schistous, sandy and rocky situations. The land must be naturally or artificially well drained.

Its great enemy is excess of moisture. It rejoices in the mechanical looseness of sandy, gravelly and stony soils, and in freedom from stagnant moisture."—*San Francisco Bulletin*.

OUT-DOOR CULTURE OF FERNS.

No family of plants possesses more graceful foliage than the fern genus, and none better deserve a little extra labor bestowed upon the cultivation. Visit the shady nooks just now when our native maiden-hair (*Adiantum pedatum*) is luxuriating, and no more delicate and graceful plant can the eye behold. In localities where this fern does not grow naturally, this, as well as most of our native sorts, can be cultivated, if a suitable place and requirements be given them.

Ferns naturally luxuriate in a cool, shady, moist location, and those wishing to succeed in cultivating them should endeavor to secure just such a place where they are sure to grow best in their native woods. About many residences there are shady places where plants in general will not grow, but where ferns would succeed remarkably well. Not only would pleasure be derived from cultivating the plants, but perhaps some unsightly object would be decorated. A place shaded with trees, but not overhanging the plants too much, is to be preferred; for if too much confined they are apt to grow weakly, and do not display their full beauty as when sufficient air and light are given them. When associated with old stumps and rough stone work, ferns look very pretty if so arranged as to look natural; but when planted with too much of an artificial style, they are far from being attractive. Some species of our native ferns form very attractive objects, growing with other plants for

the purpose of decorating shady portions of the flower garden. Some of the *Aspleniums*, *Struthiopteris*, *Polystichiums* and *Aspidiums* are very useful for this purpose.

The soil most suitable for the strong growing kinds is good turfy loam and peat, mixed well together, but not chopped too fine, as their roots are generally pretty strong, and grow best in rather open soil. The smaller growing kinds prefer a lighter soil; leaf-mould and sandy loam are more adapted to their wants. When planting them, considerable judgment should be exercised so that sufficient room is afforded the larger growing kinds to develop properly, or their beauty is not sufficiently seen. They should also be so arranged that the tall growing kinds do not interfere with the growth of weaker-growing kinds, by being placed too near each other. The best time for transplanting ferns out of the woods is when they have started into growth in the spring, being careful to retain a quantity of soil about the roots, as then there is less danger of the rootlets being destroyed.

If considerable moisture does not exist in the place to which they are transplanted, a good thick coating of some kind of mulch should be placed on the surface of the ground, to maintain a more even temperature for the roots, and also to prevent too rapid evaporation. In the evening of hot days, a good sprinkling of water on the plants is very beneficial, greatly assisting their growth and retaining their fresh appearance. During winter, after the tops have died, they are better covered with some loose hay, leaves or similar material, which may prevent them from too much exposure to the changeableness of the weather.—*M. Milton, in Rural New Yorker*.

LIQUID MANURE.

It is generally believed that no system of enriching land for small gardens, with a view to perfection of crops, is so truly economical and so easily available as liquid manure. We occasionally hear of a gardener or an amateur fruit-grower who has practiced enriching the crop by use of liquid manure, but it is not a common practice so to enrich our gardens and lawns, however often the advocacy of the practice has been written. The writer practiced the sprinkling of a lawn, in a dry season, with weak liquid manure water, and in the greatest heat and drought has kept it fresh and green. In the management of pot plants no course of supplying food equals that of a judicious use of liquid manure. There are in almost every family waste liquids which usually go into a sewer or drain, or possibly upon the road where they are of no avail; but if saved by being conducted to a tank along with the wash waters of the house, would enrich an entire garden for vegetables and fruits, flower borders, etc., and the whole, if the wash be applied regularly, and at night, after sunset, in moderate quantities, would prevent the driest weather of midsummer from checking vegetation. If an unpleasant odor comes from the tank, a little plaster (gypsum) sprinkled in and around the tank would keep it sweet and clean. Again, the use of liquid manure need never delay planting because of manure not being on hand, but planting could proceed and the application of manure made at leisure.—*American Rural Home.*

BOTANICAL STUDIES.—Prof. Meehan, in the *Independent*, remarks that there are few scientific fields that afford more scope for original and interesting observation than the botanical. There is

hardly a day but some student strikes on a novel feature, and it will be many years yet before we shall have discovered in it all that is to be known. In an English paper recently we have an interesting account of the productiveness of bulbs. Some yield an immense number of offsets, while others reproduce very slowly. In the case of one variety of tulip, called the "Goldham's Mary," only one new bulb is made every year. Many varieties of tulip "think nothing" of yielding a dozen or more. Among the *Gladiolus* of our garden the same was found to exist. From one variety, called "Brenchliensis," the observer could get a thousand young bulbs in a half-dozen years, while many will not give half a dozen new bulbs a year. There is, of course, a reason—some law governing this productiveness, and which, when discovered, will throw light on many other problems; but the reason has not been made clear yet.

FRUITS.

The Prophet Joel enumerating the trees of Syria says: "The vine is dried up, and the fig tree languisheth; the pomegranate tree, the plum tree, also the apple tree, even all the trees of the field are withered." Pliny mentions apple trees near the city of Rome, as being profitable. Grafting was not probably known at an early day; Moses in his directions to the Israelites to plant all kinds of trees for food, says nothing about grafting. Hesiod and Homer, who wrote very fully, do not allude to it. The art of grafting has been ascribed to accident, the natural union of branches of distinct trees. Within the last 50 years, great improvements have been made in the cultivation of the apple, and splendid varieties

are easily attainable. In Shakespeare's time good apples were noticeable. For in the "Merry Wives of Windsor," Justice Shallow says to Falstaff, "you shall see mine orchard, where, in an arbor, we shall eat a last year's pippin of my own grafting."

Again, in same play, Sir Hugh says: "I will make an end of mine dinner—there's pippins and cheese to come." Pippins were so called, as they were raised from the seed or *pips*. Although England is and has been always famous for both quality and quantity of apples, yet within a few years the United States has successfully rivaled her in superior fruit, and annually exports many thousands of barrels to that country.

Homer, describing the trees in the orchard of Laertes, mentions the pear. Pliny speaks of several varieties, as also a liquor made from the fruit. France, Germany and Spain have paid more attention to its cultivation than other countries. The Chinese, however, in this as in any other cultivation of fruits, have carried the pear to its greatest perfection and size, specimens having been grown, delicate, fragrant, and melting, weighing ten pounds. Recently, great attention has been paid in this country to its cultivation.

The quince, Pliny says, came from the island of Crete. From its splendid golden color, some assert it was the same with the apples of Hesperides; Galesio, in his treatise on the orange, says that the orange was not known to the Greeks, and did not grow in the locality where the gardens of Hesperides were placed. The term marmalade is derived from the Portuguese name for the quince *marmelo*. — *Christian Voices*.

SUBSTITUTES FOR ASPARAGUS.—The *Scientific Farmer* gives the following list of

plant stalks that have been used in a similar manner as a substitute for asparagus: "The flower stalk of *Ornithogalum*, according to Loudon, is used in some parts of Gloucestershire, England, and sold in Bath under the name of Prussian asparagus. The stalks of salsify, the mid-rib of the beet, and the young buds of the hop are sometimes dressed as this vegetable. The Cossacks also eat the tender shoots of the typha, a species of reed. The bladder campion *Silene inflata*, has tender shoots, which are said to be surpassed by but few vegetables. The Virginia poke, the willow-beet, Solomon's seal (*Polygonatum vulgare*), the common Comfrey, the black Bryony (*Tamus communis*), the burdock, and various other plants, furnish tender shoots which are very palatable when cooked in their blanched state."

THE ALMOND AND OTHER PRODUCTS.

The almond has been planted extensively in California, but is not regarded with favor by horticulturists generally. It appears to be a capricious tree, irregular in its productions in the situations best adapted to it, and refusing to bear in orchards closely resembling in soil and climate other places where it does well. Local experience will doubtless solve many questions that are now unsolved riddles. The tree is healthy and rapid in growth in most of our valleys, but the fruit buds are sensitive to frost, and this seems to be the chief obstacle to profit. The low land south of Santa Inez Ridge, in Santa Barbara County, has, as compared with the remainder of the State, very little frost, and that, too, is one of the best regions for the almond. The orchards of Mr. Heath, Mr. Olemstead, and Colonel Hollister, are among the most notable in the county. Mr. Heath has 65 acres,

with trees from eight to eighteen years old, and the gross yield in 1876 was about \$30 an acre, but less in 1877, a year of drought. Mr. Olemstead, who has fourteen acres, obtained \$145 gross yield to the acre in the same year.

Among the trees recently suggested for cultivation in California are the *quillay*, pronounced "keelyi" (botanical name, *Quillaya saponaria*), valuable for its bark, which is used in large quantities for saponaceous purposes; the *maiden*, the foliage of which is good fodder for cattle; the *puema* and *beyota*, large trees, producing bark used for dyeing; and *tara* and *carbonilla*, large trees with hard wood, valuable in manufactures. These trees are indigenous in Chile, grow in a climate similar to that of our valleys, and some seeds of them have been distributed of late from the *Bulletin* office, so that in a few years we may hope to hear that all are growing in the State.

We learn from the Santa Clara *Echo* that Dr. Saxe is making experiments in the cultivation of the Chinese ginger near that town, but the presumptions are not favorable to any expectation of profit from it. The ginger of commerce is a tropical plant, and though it may live in California as the banana, pineapple, coffee plant and India rubber tree have lived, it is not likely to have the vigorous growth requisite for profitable production.—*Alta*.

EFFECT OF ELECTRICITY ON VEGETATION.

—Probably every one who has entered a wood or a forest has noticed the stunted or scraggy growth of the underwood, and the cause of that peculiar condition has always been attributed to the fact that the shrubs or smaller trees were overshadowed by the foliage of the larger ones and deprived of the light and air necessary to their full de-

velopment. M. Grandeau, Professor of the Ecole Forestiere, stated that his researches on the subject led him to the conclusion that, although a certain effect was attributed to that cause, it was not sufficient to account for the great depreciation in the vegetation. After long reflection he came to the conclusion that the large trees acted as conductors of electricity, and thus deprived the undergrowth of an element necessary to their full development. In order to test his views he tried a series of experiments on various plants, but we need only refer to one, which, although not the most striking, will fully elucidate the principle he advances, the means he employed, and the results obtained. In April, 1877, he took two tobacco plants, weighing $3\frac{1}{2}$ grammes and having four leaves. They were both planted in boxes containing mould of identical quality, and placed side by side in a position favorable to their growth. But one of them had placed over it a cage, consisting of four iron rods 1 metre 50 centimes high, joined at the top and covered with wire gauze, which permitted the free circulation of air, light and water, but completely protected the plant from the action of atmospheric electricity. They were left uninterfered with until the middle of August, when the results obtained were as follows: The plant in the open air had attained a height of 3 feet 5 inches, while the other was only 2 feet 4 inches; the former weighed 273 grammes and the latter 140 grammes; when dried their respective weights were 30 grammes and $15\frac{1}{2}$ grammes. Similar experiments made with maize and wheat gave precisely analagous results, so that M. Grandeau has come to the conclusion that the electricity of the atmosphere is equally necessary to vegetation as sunlight, air and water.

FREEDOM OF CALIFORNIA FROM POISONOUS ANIMALS AND INSECTS.

We do not think attention has ever been called to the fact that there is not a State in the Union or country in the world, of like size and possessing such a variety of climate as California, which is so free from dangerous wild animals, poisonous reptiles, insects and plants as this State. We have rattlesnakes and grizzly bears among animals and reptiles, and woodticks and poison oak among insects and plants; but of these only the two latter are really annoying, while neither is really dangerous. Sheep herders and hunters and mountaineers like John Muir, have tramped over the State and slept in the open air for twenty years or more, without ever once being injured by a wild animal or reptile, or without even being poisoned by poison oak, or having their flesh made a burrowing place of by wood-ticks. Sir Joseph Hooker, the eminent English botanist, was on a botanical tour in California last year, in company with Professor Gray, of Cambridge, Massachusetts, during which he camped out for some time. He testified that he had never been in a country in his life where there were so few drawbacks to outdoor life from the causes recited as in California. Sir Joseph Hooker's testimony in this matter was worth something, for he has been a botanizing wanderer over the greater portion of the world. His opinion was similar to that of John Muir. Mr. Muir has walked over all of the Southern and many of the Western Atlantic States, and also over a large portion of Canada, studying botany and geology. He has spent seventeen years on foot in this State, engaged in those and kindred studies of natural science, and he stated to us recently that California was by far

the most delightful country he had ever been in for a wandering life in the open air.—*Real Estate Circular*.

MIDSUMMER FRUITS.

It is a little beyond midsummer, and the early grapes have been here more than a month, the Chasselas, the herald of the vintage, a semi-transparent white grape, very sweet, with a spicy subtone, and a small purple grape hardly larger than a buckshot. These began to make their appearance before midsummer, or as early as the tenth of July. They came from the warm hillsides where there are no cloudy days, and where every morning and every evening are bright with the rising and setting sun. Peaches have been in the market for two months. Only one variety has yet become abundant—that which is commonly known as the Strawberry—but for flavor and color it may be set down as the best of all varieties which find their way to this market. They came by the boat-load; baskets cover the sidewalks, and baskets fill the express wagons. If you look at a basket of peaches now, "it is a whack," and the accommodating seller immediately rattles his wagon off to your residence. No unfavorable inference is to be drawn from this fact. Peaches are abundant. There are enough to go round, and possibly some may be left on Saturday night to tip into the bay. After that the later varieties came along, great watery, acrid peaches which are a delusion, making the consumers regret the little strawberry peach which has disappeared.

Pears also made their appearance months ago. But it is not yet the highest of the season. The Madeline came first into the market, a small, green-looking pear, but with a good flavor.

The Early Harvest made its appearance, somewhat inferior to the other, but good enough to bridge over the gap of a week. Now come the Bartletts, green and unpromising, but turning to gold in drawers and cupboards. There will be no excess of this fruit in the market. Neither will it be surpassingly cheap, because there is always an Eastern demand, especially for early shipments. Car-loads of pears, laid down now in Chicago and New York, are ahead of all Eastern fruit.

As for strawberries, they have figured in the markets now for about four months, and they still tempt the purchaser, especially the new varieties; the berries, as large as plums, pale, golden or amber, with fancy names. The strawberry holds its own in the market. But it don't quite make good the declaration of Dr. Johnson or Dr. Dwight, or somebody else, that: "Doubtless the Creator might have made a better berry, but doubtless he never did." Blackberries and raspberries dispute for the pre-eminence; and they were never of better flavor than this year. The blackberry is more healthful than the strawberry. If you eat the latter before going to bed, very likely you will see your grandmother, or somebody else before morning. But the mild and sanitary blackberry does no mischief. Therefore, eat them late at night, and get up in the middle of the night if there is any craving after them. But it is best not to meddle with the cream jug at that hour--nor with any other jug. Have there not been blackberry syrups, blackberry cordials and jams from time immemorial? Who was ever injured by eating this ebony fruit, except in the discoloration of lips and teeth? There is the mild raspberry, insipid and namby-pamby, which sandwiches well in the matter of color, be-

tween the strawberry and the blackberry. But whoever takes a sip of raspberry wine, home-made, and say twenty years old, will have great respect thereafter for the raspberry--and may wish that every berry could be made into wine and kept for at least twenty years.

Then, the early plums have long made their appearance in the market. The plum likes a salt atmosphere. It comes to perfection in all the Bay counties. It is perfect in all hues of purple and gold. The great egg plum came along a few days later. Figs have been in the market entirely six weeks. The white Smyrna fig and the blue fig are now abundant. If eaten in the morning with cream, they tend mightily to put one at peace with all the world for that day. Cherries and currants have disappeared from the market. In another month a dozen more varieties of grapes, the Muscat, Black Hamburg and Tokay will make one forget all about cherries and currants. Melons are already here in abundance, and they will crowd the markets for the next two months. Early apples are abundant enough for sauce to go with the spring chicken. But the glorious Belleflowers and the Newtown Pippins have not yet put in an appearance. One of the most attractive sights in the city just now is the fruit market. And probably in no city in the United States is a greater variety of fruits to be found at this midsummer time than in the San Francisco market.—*Bulletin.*

CLIMBING PLANTS.

A correspondent of an Eastern paper writes as follows on the Maurandya:

"After many years' experience in the culture of flowers, I am compelled to place the Maurandya in the front rank of climbing plants. Without wishing to

appear particularly enthusiastic, I assert that this vine possesses all the requisites of a perfect climber—rapid growth, graceful habit, beautiful flowers, and adaptation for baskets or rock-work, as well as the trellis. And it possesses still another virtue worthy especial mention. The great majority of vines with which I am acquainted have a habit of perfecting their upper leaves at the expense of the lower—allowing them to grow yellow or to drop off with age, giving the plant an unsightly appearance. The *Maurandya* has no such weakness. Of a woody growth, it is constantly 'stooling' from below; and the whole plant, let the weather be wet or dry, remains a lively green, without one discolored leaf to mar its verdancy.

"The flowers are somewhat like the well known foxglove in form, although much smaller, and of three colors—rose, white, and purplish pink. Unlike most other climbers, the flowers are not produced from the top of the plant, but are distributed evenly over its surface, owing to the constant shooting forth of new branches.

"Although the *Maurandya* can be obtained at most greenhouses, I would advise growing them from seed, as from one package, for which you pay ten cents, you can get twenty or more plants, that will bloom abundantly the first season, and be in fine condition to remove to the house in the winter, to grow luxuriantly the following season in the garden. The seed can be sown either in the hot-bed, cold-frame, seed-bed, or in boxes in the house. The earlier the seed is started, the finer plants you will have; but even late-sown seed will produce good results. Sow the seed thinly, and do not allow the young plants to stand less than two inches apart. You can transplant the 10th or 15th of May, as it is half-hardy,

and can be removed as safely as a cabbage plant. Make the soil in which this plant is to grow very rich. Any kind of a trellis will answer, but that in the form of a screen is best. The *Maurandya* is excellent for baskets. A single plant will suffice. For rock-work it is unsurpassed. It is better to set it after the other plants have got some growth. It will then cover the whole, as with fairy drapery, adding greatly to its beauty. When frost touches the tops, cut each plant off to within three or four inches of the ground, and set in boxes or pots. Within a week vigorous shoots will appear, and, if placed in a south window, will completely cover it before winter is over."

GARDENING IN FRANCE.

The *American Cultivator* prints an article on gardening in France from which we extract the following:

"Throughout France gardening is practically taught in the primary and elementary schools. There are at present 28,000 of these schools, each of which has a garden attached to it, and is under the care of a master capable of imparting a knowledge of the first principles of horticulture. Even in the schools to which no garden is attached the theory of cultivation is taught. Strange as it may seem to the average American, the principal object of education in French schools is to enable the pupils to acquire that practical knowledge which shall enable them to earn a living through their own efforts. Agriculture, horticulture and the mechanic arts are considered of more importance to the average youth than Latin, Greek and algebraic formulas.

"French horticultural industry is on the increase. From fifteen to twenty years ago the exports of fruits and veg-

etables realized \$1,500,000 to \$2,000,000, while now they amount to \$7,000,000 to \$8,000,000. In the department of the Seine alone there are 23,803 cultivators of different kinds, who together annually produce over \$5,500,000 worth of fruit, vegetables and flowers. A few years since there were in this department or country 427 gardens, covering an area of over 200 acres, of which 2,500,000 square feet were under glass. The number of glazed frames is computed at 360,000, in addition to which 2,000,000 bell-glasses are used to forward lettuces, endive, radishes, and other early crops. The underground quarries, used for mushroom growing, had an area of nearly twenty acres, consuming \$12,000 worth of manure, while the value of the year's crop was \$360,000.

"The total quantity of fruit brought into Paris in a single year is estimated at 62,000 tons; fresh vegetables from the south of France, 19,700 tons; vegetables from the vicinity of Paris, 343,620 tons, and of dried vegetables and herbs, 16,735 tons.

"France is the orchard of Europe, and has also distributed from her commercial nurseries more trees than any other nation, having fully 200,000 acres in such nurseries. The finest kitchen garden in France is that belonging to the State at Versailles, which produces an average yearly revenue of \$4,000 for fruit and vegetables alone."

BRIGHTEN YOUR HOMES.—Homes should not only be filled with love and affection, but should be beautiful in every way that taste and means will allow. Air, light, and sunshine should be first among the sanitary conditions. Pictures, birds, and flowers should each have a welcome place; every room should have its attractions in little

adornments that give the cozy home-look we all love. They unconsciously cultivate in the child a love for the beautiful and the refinements of life. Books, too, should be household idols, and their beauties and value gradually taught. If the boy has a taste for reading or literature, furnish him a good selection of authors, not beyond his comprehension, lest you clog instead of advance his ideas. If he display a taste or talent for music, give it all the auxiliaries your means can secure. Whatever the predominant trait of the budding mind, give it all the fascinating aid that suggests itself to you. Let your boys feel that you are in sympathy with their pursuits, and thus stimulate a noble ambition that will make them desirous to excel for the sake of the loved ones at home, and whose praise will be worth more than that of all others, for they feel it is sincere. Thus this freedom, congeniality and sweet influence will "keep the boys at home," and it will indeed be to them the "dearest spot on earth," the love of which the fret and turmoil of after life will not be able to erase.

THE ORANGE BELT.—The public generally understand that the San Joaquin Valley is a vast plain, some three hundred miles in length, from north to south, and from thirty to fifty miles wide. The only drawback has been that in some seasons the rainfall has been light, otherwise the valley would be one of the most productive portions of the State. The soil is rich, and the climate is such that almost any semi-tropical productions will come to maturity. In some locations tracts of forest trees have been planted from eighty to one hundred and sixty acres in a place with eucalyptus, which are already valuable for timber. A tract

planted in this way with eucalyptus, in ten years will become a forest of trees from ten to twelve inches in diameter. Indeed, we scarcely know of any business in California which would pay any better. It would be a valuable idea for the farmer to plant a portion of his possessions with trees and cultivate the balance of his land in the usual way. In this connection we copy the following paragraph from the columns of an evening contemporary, having reference to this same valley—the San Joaquin—which will be read with interest.

It was once supposed that only the southern counties of California were adapted to orange culture. But experience has demonstrated that oranges can be successfully raised in the foothill counties and in the Sacramento Valley. Foothill oranges, exhibited at the State Fair, from Placer and Yuba counties, have equaled those produced at Los Angeles. For some time past orchards along the banks of Putah Creek, in Solano and Yolo counties, have sent the earliest oranges to the San Francisco market. But now comes another section of the State claiming equal suitability for the growth of oranges and lemons. The Fresno *Expositor* states that Thos. A. Garsey, a well-known orange and lemon culturist of Los Angeles, after examination, has pronounced the soil and climate of Fresno County equal to that of Los Angeles for the cultivation of orange and lemon trees. The endorsement of Fresno County naturally includes portions of Tulare and Merced counties, where similar conditions of climate and temperature exist. The San Joaquin Valley has hitherto been known as the great wheat producing region of the State, but when irrigation facilities have been supplied, it may become equally as recognized for semi-tropical fruits.

It has long since been established that certain varieties of grapes will flourish as well in the plains of the San Joaquin Valley as in the foothills.—*Bulletin*.

PERFUME.—Perfume is as old as creation. It is to flowers what the soul is to the body. We can picture Eve as she pulled down the rich bloom of the creamy magnolia in the Garden of Eden, or went gathering cape jasmine, or heliotrope and mignonette. Children instinctively reach for odorous flowers even as the grass does for the blush of light that the dawning sends thrilling over hills and valleys. Let us give the little ones beds of mignonette, and sweet pinks, and deep-hearted violets.

There is one variety of the beautiful golden pansy which is very fragrant, and a white verbenia that has caught the woodland breath of the trailing arbutus.

Nature is the true chemist, and from her laboratory are distilled perfumes dreamy and sweet as a breath of paradise. From the first dewy breath of spring, through all the evanescent glories of apple-blossoms, sweetbriar, or wind-tossed anemones, and sweet ferns and trailing vines, through all the floating shadows and golden lights of the summer time, till the purple air of autumn causes the asters and golden-rod to come out on the dreamy days, it is all one succession of entrancing beauty and perfume.

The fragrant breath of a flower is like the beauty of goodness and purity in life. It is consecrating, refining. When the poet tells us of

“Life sweet as a perfume, pure as a prayer,”

the comparison is one truly exquisite, expressing all pure aims and lofty purposes and sweet aspirations of life, ever tending upward, ever gladdening all around, even like the fragrant perfume

of a thousand flowers when borne upon the wings of the morning.—*St Louis Post.*

Editorial Portfolio.

OUR FRONTISPIECE.

THE CALIFORNIA SNOWPLANT.

(*SARCODES SANGUINEA*.)

Along the western slope of the Sierra Nevada, and close to the line of the snow, there grows a strikingly interesting plant, commonly known as the Snowplant. It was discovered by the naturalist connected with Col. Fremont's party, in 1843 and 1844; but first brought to the notice of botanists by Dr. Torrey, in "*Plantæ Fremontianæ*," where its history and true botanical character and position is given together with a plate.

Dr. Torrey described it under the name of *Sarcodes Sanguinea*, a new genus of the small sub-order *Monotropeæ* of the natural family *Ericaceæ*. Its specific name aptly refers to its bloody or rosy color. The entire plant being of a succulent, fleshy texture, of from 6 to 18 inches in height, growing under pine trees, generally starting up about the time the snow melts. It is sometimes seen growing up through the thin stratum of snow, and hence the popular name which has been given to it. It depends for moisture upon the melting snow. It resembles asparagus somewhat in its form of growth, is equally succulent, and we have heard it stated, that when boiled and served up in the manner of that vegetable it is palatable and nutritious. The figure which we herewith present has been printed (colored by the Editor) from a cut kindly loaned us by the publishers of the *Pacific Rural Press*, which was drawn and engraved for that highly

valuable agricultural publication from a photograph, and is very much reduced in size from nature.

It has been found as far north as Lassen's Butte in Northern California, and abounds in the Yosemite Valley, and around the Calaveras grove of Big Trees, where its remarkable appearance attracts the attention and interest of the commonest observer. Travelers crossing the Sierras early in the spring find the plant for sale at the way stations as a floral curiosity.

It seems to be parasitic, and has not thus far been known in cultivation. We have known specimens transferred to this city, which by careful attention, and frequent watering with very cold water, increased some little in height and came into bloom; but soon withered and died.

The flowers are frequently brought to this city, where they are kept in vases of ice water, putting out flowers for several weeks.

We have also seen a correct and handsome drawing and painting of one of them by Miss Williams, and in the possession of our well known Yosemite pioneer and naturalist, Mr. Hutchings, to be seen (we mean both the gentleman as well as the picture) at Mr. Beach's book store on Montgomery Street.

THE VICTORIA REGIA WATER-LILY.

As we are soon to have the pleasure of seeing this famous and interesting aquatic plant growing in a tank in one of the conservatories of the costly and grand Hopkins Mansion on "Nob Hill," we consider that some description of it may not be unacceptable to our readers. Like the rest of the grounds and plant houses of this superb mansion, this cistern for the regal beauty is under the

experienced care and management of G. Nicholson, the well-known florist of Oakland.

The *Victoria Regia* has been an object of unceasing interest from the moment of Sir Robert Schomburgk, in 1837, finding this magnificent plant in one of the rivers of British Guiana. In England the *Victoria Regia* first flowered at Chelsea, in 1849, and the *spectacle* was engraved in the *Illustrated London News* for November 17th.

The first flower partially expanded on the evening of the 16th of March; for some hours previously it gave out a very rich and powerful fragrance, which could be perceived at a considerable distance. The flower became fully expanded on the following evening, and displayed all its beauties to an admiring company, who had for a considerable time been watching its development. The colors of the lily are white and pink; the outer rows of petals being white, and the inner a rich pink. The entire flower is from 9 inches to a foot in diameter; it is of short duration, opening only in two successive evenings; but there is a constant display of flowers throughout the season. The plant has a more noble appearance in the open air than when growing in a hot-house aquarium—the leaves becoming hypocrateri form a natural desideratum of much interest.

The cistern in which the plant is to grow at the Hopkins residence is to be heated by hot water pipes, of which there are to be two rows placed at the bottom, communicating with a boiler which heats besides a range of houses below, the temperature being kept at from 75 to 90 degrees Fahrenheit. There will be a constant flow of water into the tank, and a waste pipe to carry off the superabundance and keep the surface clear. A margin of blue, yellow, and

white water-lilies will probably be placed round the *Victoria Regia*, which will tend to show well their lovely and truly regal sovereign in all her majesty.

The huge circular leaves of this splendid plant are four to five feet across, and are like great umbrellas in size; and the blossoms, as large as a man's hat—pure white tipped with crimson—float upon the surface with a very queenly dignity, as if ready to command admiration. A small frame of board being placed on one of the leaves, in order to divide the weight equally as it floats, will uphold the weight of a man readily. This plant is, unquestionably, the most magnificent aquatic known. Of course one never can get a perfect idea of the magnificence of this lily in its native localities, the lakes and pools of the tropical South America, even if an entire hot-house should be built for its growth. But still, it is a grand and beautiful sight, as to size and proportions, as far as a single plant goes. The successful cultivation of the *Victoria Regia* may be taken as a proof of both the skill and luxury of the art of modern gardening. An aquatic plant, which demands the atmospheric temperature of the equator, and at least 20 or 30 feet of space to extend its leaves, which requires to grow in a pond of water, kept to the temperature of 85° Fahrenheit, and still more, to have this water gently agitated to imitate the movements of a stream, would have been pronounced beyond the limits of cultivation by most persons. The natural conditions of the plant in California in many places are, undoubtedly, more favorable than they can possibly be either in England or the eastern portions of the United States.

BUTTER was in use 4,000 years ago.

THE HORTICULTURAL EXHIBITION AT
THE MECHANICS' FAIR.

There can not be any doubt whatever that the garden at the Mechanics' Institute, and the exhibits of plants, flowering shrubs, and cut flowers, have exerted their influence upon the public in cultivation and taste. If the question was put to us—what, within the last ten or twelve years in California, has contributed to the promotion of first-class cultivation among gardeners? we would have no hesitation in answering, the public exhibition of plants at our fairs; for though there may be many who may profess not to have been so influenced, there can be no question that the first great cause of improvement has been the noble and praiseworthy example of skill, periodically brought together under the auspices of these Societies, which examples being, to a great extent, particularly described by the horticultural press and the general newspapers, have been sent through the length and breadth of the land, thus penetrating and eradicating prejudices in the craniums of some of our would-be wise fellow citizens, which could not be eradicated by other means. Again, the employers of gardeners have witnessed what could be accomplished by proper management; and hence, where the means were allowed, the gardener had nothing but his own want of skill to blame if he did not accomplish that which others had done before him. Apart, however, from the influence of these shows upon cultivation, there can be no doubt they have effected much good in guiding the artist, and in improving and correcting the taste of the middle and richer classes of society; and of this we need no stronger proof than the fact that manufacturers look to nature and not to art, for

patterns to beautify the varied productions of the silk loom, etc.; while artists in wax and artificial flowers imitate nature so closely as to render it difficult, in some specimens which we have frequently seen in this city and at our fairs, to tell whether they were real or not.

Our object, however, is not so much to point out the benefits accruing from these exhibitions as to call the attention in the future of the managers of the exhibition themselves or the professional and amateur florists to the desirableness of infusing a little more artistic effect into the arrangements of the exhibition groups of plants and flowers, for we feel convinced there is yet much room for improvement.

We venture to assert that amidst collections of both plants and cut flowers, their effect and the scene would be much improved if stands formed of rustic work or *terra cotta*, or any other fit and graceful material for the exhibition of Orchids or any other curious, showy, or beautiful classes of plants, were as tastefully filled, as the designs were appropriate, a very pleasing and highly gratifying result would be achieved. These stands, tastefully filled, and introduced into that portion of the garden or hall appropriated to collections of plants and tables of cut flowers—say a rustic stand in the centre, between the tables, and a *terra cotta* stand at each end of the compartment for plants and flowers, thus forming a group with a centre, and two sides—we are quite sure would be much admired, and would impart quite a new feature to our exhibitions. Grouped artistically with mixed plants, some remarkable for their flowers, others for their noble foliage, and a third, as the ferns, for their graceful habit, a very striking effect might be produced; and

introduced upon the same principle as into a conservatory, or ball room, we can not see that they would be out of place.

To somewhat illustrate what we mean, in our late display at the Mechanics' Fair, the table of Mr. Upton (a zealous amateur), covered with Dahlias, Gladioli, and other cut flowers, was much embellished by a vase of flowers, grasses, ferns, etc., most tastefully and gracefully grouped to a considerable height, placed in the centre. In short, we are quite certain that if plants of an opposite and striking character were always introduced in these or similar stands, the appearance of this compartment would be greatly improved, and visitors would not fail to appreciate the improvement. We need more of the science of the beautiful to enter into the arrangement, grouping and displaying of our horticultural departments at our fairs in general in the State, and in our garden at the Mechanics' Institute in particular.

INSECTS IN CALIFORNIA.

Before 1875, we never heard of a worm in California fruit; in 1877, wormy apples began to appear in our market, and this year we have worms in pears, apples and peaches. They are not numerous, it is true, but they excite apprehension for the future. So far as we have seen or heard, they do not lead to any distortion in the growth of the fruit, and they have not ruined the entire crop of any orchard as in many Eastern States. We were told ten years ago by a very competent observer that the curculio had made its appearance in Tuolumne County, but, if the report was correct, the little pest did not find the climate or other circumstances favorable, and he is not known in the State. Our cherries and

plums can be eaten safely with the eyes shut by those who adhere to a strictly vegetarian diet.—*Alta*.

We have for some time past noticed, from different parts of this State, that some of the Eastern and foreign insects have commenced to commit depredations on our fruits and vegetables. This was to be expected, from the many and continual importations of various produce, etc., from the East both by rail and by ocean. The above remarks of the *Alta* with regard to worms in some of our fruits induces us to give a description of the apple-worm (*Carpocapsa pomonella*), or the Codling-moth, which is a Tortrix or Leaf-roller. It is stated in the best entomological books that it was first introduced in the New England States from Europe, and has been steadily increasing as their orchards grow older, until they now have but few perfect fruits. The moth appears early in the summer to lay the eggs of the first crop of worms. The eggs are dropped singly upon the blossom end of the apple, pear, or peach, that affords an entrance to the young worm, which passes to the core, about which it consumes the pulp and the seeds. The worm is whitish, becoming flesh-colored. In warm weather it attains its growth in three or four weeks, and makes its exit by gnawing through the side of the fruit. It instinctively seeks the stem of the tree to secrete itself under the scales of bark, and this affords us an opportunity to destroy it in the pupa state, for it will creep under any shelter that may be put in its way.

The remedies will depend upon the habits of the insect. The moth, being nocturnal, may be destroyed by burning lamps or fires in the orchard during April and May, when they are first at work; cheap coal oil may be used for the purpose. The pupæ can be en-

trapped in large numbers, by putting a piece of old rag in the crotch of the tree, beneath which the worms will crawl to spin their cocoons, when they may easily be destroyed.

All wormy fruit should be gathered as soon as it falls from the trees, and either be boiled, or at once fed to swine. Hogs and sheep kept in the orchard, will generally consume the fruits as fast as they fall to the ground; and this is the simplest and cheapest method of destroying the worms.

There are several species of apple-worms. One kind does great mischief to apples after they are gathered. It is supposed to be *Molobrus mali*, or apple midge, described by Dr. Fitch. The eggs are supposed to be laid in fresh apples, in the holes made by the above described Codling-moth, whence the larvæ penetrate into all parts of the apple, working small cylindrical burrows about an inch in diameter. Apples that appear perfectly sound when taken from the tree, will sometimes, if kept, be all alive with them in a few weeks. An allied fly is the parent of the cheese maggot. So also is the Wine fly, House fly, Blue-bottle fly and Meat fly, (*Muscabomitoria*).

The American nest or tent-caterpillar (*Clisiocampa Americana*) is undoubtedly beginning to make great ravages on the apple foliage in many orchards, and if not destroyed in their eggs or nests, will destroy in 7 or 8 weeks both leaves and fruit. We can reach their nests with a long pole at the end of which should be fastened a sponge or rag moistened with soap suds, white wash, or creosote oil. This should be done early in the morning when all the caterpillars are in their tents.

We suppose, too, we shall soon have the more destructive measuring or span-worms, more destructive because they

work singly and can not be got at like the nest-caterpillars.

Then there is the Canker-worm (*Anisopteryx pometaria*). These destroy many trees, both fruit and shade. The female is wingless, and is obliged to perform her journey as well as she can on foot to the nearest tree. She reaches in time the tree, climbs up its trunk and branches, and there deposits her eggs in clusters of a hundred or more, which she then fastens to the branch or twig with a firm covering of waterproof varnish. The caterpillars are hatched the ensuing spring.

Finally there is the Lime tree span-worm (*Hibernia tiliaria*), which attacks in the East the lime, poplar, elm and apple trees. There are some methods of preventing the evil of these last two pests, but it will be time enough to describe them when they appear among us, which we trust may never be, but we would not be much surprised at their advent.

PUBLICATIONS RECEIVED.

Peter Henderson & Co's., Wholesale List of Seeds for 1878, New York. This is a well known and reliable firm in this business, and possess good advantages as seedsmen. The senior member has been for twenty-five years personally engaged in growing flowers and vegetables—in short is a "Practical Gardener" in the most comprehensive sense of the term.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Vines, Roses, etc., cultivated and for sale by Farley, Anderson & Co., nurserymen, Union Springs, New York, with how to plant, fruit facts, facts about old fruit trees, etc.

Vick's Illustrated Monthly Magazine for September, (Rochester, New York,) with a beautiful colored illustration of

a group of Honeysuckles and the usual number of interesting and instructive articles on the culture of various flowers, etc.

Vick's Floral Guide, Autumn, 1878, with a specially valuable article on the cultivation of Bulbs, Crocuses, Lilies, etc.

R. J. Trumbull & Co's., Vegetable and Flower Garden and catalogue of Fruit and Ornamental Trees, Shrubs, Bulbs, Plants, etc., 419 and 421 Sansome street, San Francisco. Nursery corner H and Center streets, San Rafael.

Annual Descriptive Catalogue of Bulbs, and other Flowering Roots, with direction for their culture and management offered by J. M. Thorburn & Co., growers and importers of seeds, 15 John Street, New York, September, 1878.

Smithsonian Miscellaneous Collections—316. Circular in reference to American Archæology, Washington, D. C., February 1, 1878, requesting answers to their questions on the above subject.

Wholesale Price List of Grape Vines, Fruit Trees, etc., Spring, 1878. T. S. Hubbard, Fredonia, New York.

Joseph W. Vestal's Wholesale Trade List of Roses, etc., etc., Cambridge City, Wayne Co., Indiana.

Dayton Star Nurseries, established 1858, Wholesale Price List for the sale of 1878. Hoover & Gaines, Proprietors, Dayton, Ohio.

Sorgo Hand Book. A treatise on the Chinese and African Sugar Canes, varieties, culture, and manufacture. Cincinnati, Ohio, Blymner Manufacturing Co., 1878.

Drew's Window Garden, Mount Vernon, Ohio, but now of El Dorado Nurseries, California. Excellent treatise on soil, drainage, liquid manure,

watering, care of plants received by mail, insects and their remedies, preparation of plants, propagating from slips, from seed, heat, moisture, fresh air, light, cleaning, etc., etc.

Dewey's Classified Catalogue of colored Fruit Plates (large, medium and pocket series), containing handsomely colored portraits of over 2,000 varieties of fruits, flowers, ornamental trees, etc., colored from nature, Nurserymen's Requisites, etc., 1878. Arcade Hall, Rochester, New York.

WOODWARD'S GARDENS.

Among the numerous objects of interest and instruction to be seen at this popular and famous public resort is the Zoögraphicon or Rotating Tableaux of Natural History, invented by F. Gruber, and originally constructed in Woodward's Gardens, San Francisco, California.

The Zoögraphicon exhibits in rotation eight scenes of various parts of the world. The animals, birds, reptiles, etc., are all geographically distributed in the diagrams or in the country they represent and assume life-like attitudes and movements. Scenery painted by Mr. O. L. Fest, machinery constructed by Mr. Sam. S. Abbot and Mr. Richard E. Williams.

The Arctic represents floating icebergs in the distance. Walrus, seals, and northern divers are seen swimming among the white capped waves. Arctic sea parrots, gulls, razor-billed duck, snowy owl, snow grouse and snow-birds are hovering around the scene on projecting icicles. The aurora borealis or northern light indicates the north pole.

North America passes a view of the Mississippi River. An alligator sitting on a log floating and dipping in the water. A coot exercises his diving skill, the

teal his swimming powers. To the left on the top of a tree, a large black woodpecker is hammering, underneath a drowsy owl is peeping out of her hiding place, while in a hole on the base of the tree a squirrel frightened by a watchful fox withdraws to its retreat. A weasel is seen to come out of a cave on the shore and disappear. A puma or cougar crouching on a precipitous rock seems to be ready to jump down upon a deer and fawn resting on the ground under a magnolia tree.

A golden eagle carries off a white rabbit to a dense foliage. Blue jays, robins, meadow larks, blackbirds, tanagers and numerous other birds enliven this very beautiful scene, as if to observe the sunset on the Mississippi River.

South America exhibits a tropical forest of Brazil with rich foliage in which monkeys are seen swinging on lianes. A potto carries a bird to his abode, a cavy walking to the front on an inclined log, iguanas catching flies, flamingos, rosy spoonbill, and boat-billed heron are gathered around a lake in the rear.

Troglons decorated in golden green plumage, blue chattering and manakins, toucans and parrots sitting on the higher branches, humming birds like the brightest jewels flash through the verdure. In front an industrious ant-eater pays his visit to a lonely ant-hill. The fierce harpy eagle seeks shelter under the shade of the palm trees. Butterflies and insects show their beauty amongst gay flowers. A group of the *South Pacific Islands* are seen in the distance. A grotto in front exhibits objects of marine wonders, the bright colored sea anemones, starfish, sea fern and weed. Many fish, shells, and corals showing in artificial aquatic caves their pretty forms. A man-of-war bird and a tern are fighting on flighty

expanded wings for the possession of a fish. Divers, cormorants and albatrosses, petrels, shear-water, puffins and gulls hover over rocks while others are swimming in the water. A roussette or flying fox clinches to a palm tree, others are suspended from the crevices of the grotto.

Australia presents a view of distant mountains. A waterfall rushes down the rocks. The blue gum trees and the cassurina are prominent. A kangaroo jumps across the scene. Over rocky cliffs climbs the native cat. The platypus, echidna and Australian opossum are plainly visible. On a tree to the right a sulphur-crested cockatoo bows to his mates. A tree opposite seems to be the rendezvous of flocks of bright parrots. Under the tree a bower bird is constructing his wonderful nest. The emeu attracts attention in the foreground. Magnificent rifle and regent birds swing in the branches, while the curious kingfisher, called "laughing jackass," is in the act of descending to a tree-fern to fight a large crow-shrike. Even the bee-eater, the pardalote finch, and the showy pitta are present.

Africa produces a rich view of Egypt with the sphynx and the pyramids in the distance. The river Nile here shows its last representative, the hippopotamus, from times gone by. This unwieldy animal emerges from the water breaking through the channel grasses. A young camel takes refuge under the shade of a tree. Suddenly an ichneumon moves forward to the shore. Some carnivorous animals in the centre of the scene chase each other. Close to the front a zorilla cat shows his head and quickly retires. Many other beautiful animals and birds are scattered around the scene.

Europe exhibits the lofty Alps and the glaciers. On the shore of the lake

a grist-mill projects from the rocks and pine forests, and the overshot mill-wheel works at steady turn. Venerable oak trees overleaning the scene in front bear witness of the European fauna; the cuckoo, the jay, the nightingale, the yellow-billed blackbird, the hoopoe, the hawfinch, and many other pretty birds are housed in the branches. A jealous couple of ruffneck-plovers fight a combat without armistice. Master reinecke pursues a gray rabbit. The falcon, the owl, raven, field partridge, lapwing, the large black grouse, or capercailzie, all are found in this exquisite zoögraphic picture.

Asia gives a view of the gigantic fig or banian trees of India. An elephant forces his way through the jungle swaying his trunk in defiance of a tiger appearing upon the scene, and slowly crouching backward espying a huge snake coiled around the trunk of a tree and moving his head in attack against an animal on the tree opposite. A large zibet cat at this moment travels slowly across the foreground. Other suitable animals and birds represent the scene to perfection.

CULTIVATION OF FRUIT AND REPORT ON THE FRUIT AND VEGETABLE MARKET.

Of the large number of different varieties of fruits cultivated in the United States, the apples are the class of which we can show the most varieties that have originated in and are peculiar to the country. Nearly all these have been originated through the want of nurseries of grafted sorts, hence the farmers in early days were compelled to plant the seeds and raise the trees up to the bearing state, when, among many thousands, every locality had some fine and valuable sorts, surpassing all those

imported in hardiness, good bearing, merit and usefulness.

As it is true that every section of the country, every locality, has a peculiar climate, and none more so than California, different in some respect from every other, so it will be found that every variety of clime will have its own peculiar sorts of fruit, which will attain the highest degree of perfection only in their native place, and will lose some of their good qualities so soon as brought out of it. Horticultural societies and pomological conventions have tried to mark out the varieties of fruit which are worthy of general cultivation, and still there is no such thing entirely. Early spring Eastern apples, for instance, become summer ones here, their summer apples become fall, autumn apples change into winter, and of real winter or subsequent spring apples we have but very few. How important and desirable it would be if we could originate an *assortment* of apples of this valuable quality of late flowering and consequently of late keeping.

But many a fruit grower in this State will ask who can afford to raise orchards of thousands of seedling trees with the uncertain prospect of getting one or perhaps two superior kinds of fruits in the whole, and how can those two trees pay him for his labor and expense.

So long as the old mode of planting and raising seedling trees is followed, there is little prospect that any one will try it on an extensive scale. If the famous new pear originating Van Mons of France, in raising his 80,000 seedling pears, had been compelled to have a standard tree of every one of them, the experiment would probably have been impossible with him, and the time required to get up the tenth generation in pears would have required scarcely less than 150 years.

The markets, about the end of last month (August), were still filled to overflow with fruits belonging to the season. The influx of Peaches, however, was diminishing rapidly, but Apples, Pears, Plums, etc., were abundant, with plenty of Blackberries, Strawberries and Raspberries. Watermelons and Canteleups were very plentiful and at a very moderate price. Grapes were in good supply. The *Commercial Herald* says: We have now to announce the arrival from Tahiti of the Julia M. Avery, with 200,000 Oranges and 5,000 Cocoanuts. This arrival swells our receipts of the Society Island Oranges for the current season to 4,000,000, which is about the same as that of the year previous. Increased attention is being given to drying fruit this season, and some of it is of a very superior article. The Gustave, for Melbourne, carried 193 packages assorted dried fruit. The spot market continues to be well supplied with all kinds of seasonable fruits, such as Apples, Peaches, Pears, and Plums, besides Blackberries, Grapes, etc. Canteleups and Watermelons are also very abundant, and are selling at very low prices. The fact is, we have more fruit than consumers, and consequently large quantities are daily dumped into the bay. Our cannery consume largely of the best and choicest varieties, but for all that we have too much inferior fruit sent to the city that is not worth boxing nor the freight, and all this should be dried and otherwise utilized at home. This, by the use of various steam drying machines, can be done at little expense and to much profit. The Grape and Raisin crop will be large this season. Apples, 75c. to \$1 per box; Common, 35c. to 50c. Pears—Common, 25c. to 40c. per box; Bartlett, 85c. to \$1. Plums—June, 1c. to 3c.; Prunes, 4c. to 5c. per lb.

Peaches—75c. to \$1.25 per box; 60c. to \$1 per basket. Apricots, 3c. to 4c. Strawberries, \$2.50 to \$3.50 per chest. Raspberries, 9c. per lb. Blackberries, \$3 per chest of 200 lbs. Figs—White, 3c. to 4c. per lb. Oranges—Tahiti, \$20 per M. Lemons—Sicily, \$12 per box. Limes, \$7 to \$8 per 100. Bananas, \$3 to \$4 per bunch. Pineapples, \$5 to \$6 per doz. Cocoanuts, \$4 to \$5 per 100. Watermelons, 3c. to 8c. apiece. Canteleups, 1c. to 4c. apiece. Grapes, 30c. to \$1. Dried Fruit—Apples, 5c. to 8c. per lb.; Peaches, 8c. to 9c. per lb.; Pears, 7c. to 10c. per lb.; Plums, pitted, 12½c. to 15c.; Apricots, 15c. to 16c. per lb.; Blackberries, 12½c. to 15c. per lb.; Figs, 4c. to 5c. per lb.; California Raisins, \$2.50 per box.

A tree which was lately cut down in Kansas contained three swarms of bees and over two hundred pounds of clear honey.

METEOROLOGICAL RECORD.

FOR THE MONTH ENDING AUGUST 31ST, 1878.

(Prepared for THE HORTICULTURIST by THOS. TENNENT, Mathematical Instrument and Chronometer-maker, No. 18 Market Street.)

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Mean height at 9 A. M.	30.00 in.
do 12 M.	30.00
do 3 P. M.	29.99
do 6 P. M.	29.99
Highest point on the 24th at 12 M.	30.11
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(With north exposure and free from reflected heat.)

Mean height at 9 A. M.	63°
do 12 M.	68°
do 3 P. M.	67°
do 6 P. M.	61°
Highest point on the 31st at 12 M.	76°
Lowest point on the 17th at 6 P. M.	55°

SELF-REGISTERING THERMOMETER.

Mean height during the night.	52°
Highest point at sunrise on the 31st.	60°
Lowest point at sunrise on the 18th.	47°

WINDS.

South-east on 2 days; west on 29 days.

WEATHER.

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Previously reported	0.01
Total	0.02



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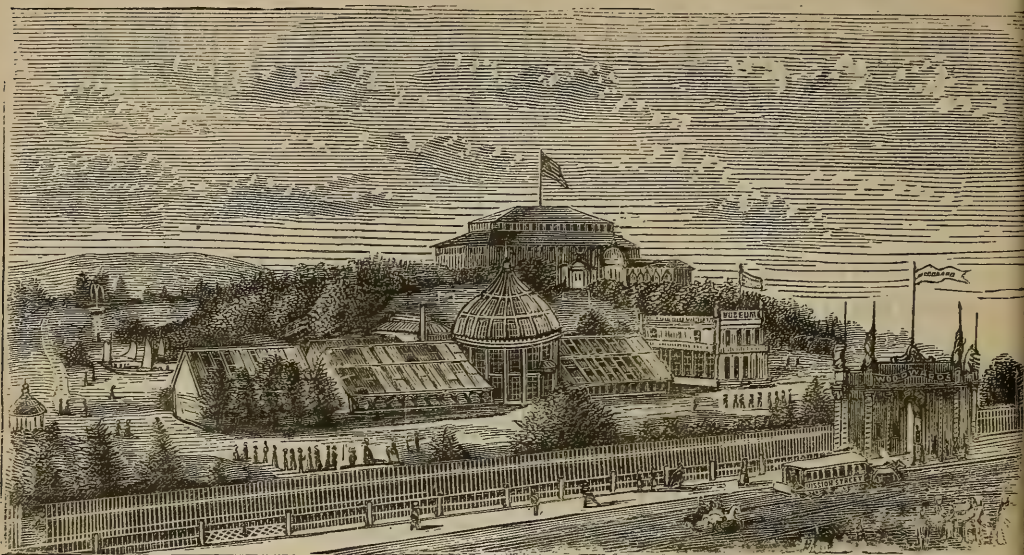
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No. 10.

CULTIVATION OF FLOWERS.

BY FLORIST.

"Flowers! The cultivation of flowers," say some; "of what use? It neither gives us meat, drink, nor clothes." Well, suppose it does not? Shall we not turn our thoughts to something else besides wheat and potatoes, and the productions of the earth which only keep soul and body together? Is there no mind to feed and delight? Shall we always be plodding and gathering up substance merely and money alone? Will it always be the inquiry of farmers in particular, "what shall we eat, and what shall we drink, and wherewith shall we be clothed?" Must care and business on this craving, gambling and wealth pursuing coast always engross our whole minds? The earth, the seas, and skies, are full of the wonders of nature's beautiful creation. Shall we close our eyes, stop our ears, and be dumb where there is such an endless profusion around us to delight, to cheer and soothe us? Every man in business, or out of it, should have some object, better perhaps in the fresh and pure country air than elsewhere, to afford him health, recreation, and employment. We need

compass, sea and land, too, only for our gratification; the means are within the reach of every one for innocent and sanitary occupation, amusement and relaxation. It lies around us; it is at our feet; it may be found in a garden where, we are told, whether a fable or not, everything pleasant to the sight was congregated.

Flower gardens were ever held in high estimation by persons of taste. Emperors and kings have been delighted with the expansion of flowers, and a more exalted personage of olden time called the attention of his followers to the beauty of flowers, when he said, "Consider the lilies of the field, how they grow, they toil not, neither do they spin, and yet I say unto you, that even Solomon in all his glory was not arrayed like one of these." Nature in her gay attire, unfolds a vast variety which is pleasing to the human mind, and consequently has a tendency to tranquilize the agitated passions, and exhilarate the man—nerve the imagination and render all around him delightful. Who that has been confined to the business of the day, toiling and laboring in the sweat of his brow (or brains), does not feel invigorated and

refreshed, as he takes his walk in the cool of the evening, with the happy family group around him, and marks the progress of his fruits and flowers? Or who, that inhales the delicious fragrance of the morning flowers, glittering with dew, but can "look up from nature unto nature's God," who has strewed, with such liberal profusion, in every direction, the evidence of his goodness to the children of men. Here, by the by, are two words which express the desirableness of the married state and a home, if possible, for the care-worn business man, in the country or at least in the suburbs of a large city.

The cultivation of flowers, or at any rate the possession of them, is an employment adapted to every grade of society—the high and the low, the rich and the poor; and especially for those who have retired from the busy scenes of life. Man was never made to rust out in idleness. Indeed, this is the very destruction and death of many. A degree of exercise is necessary for the preservation of health, both of body and mind, as food.

Who that was blessed with parents that indulged themselves and children with a garden, can forget the happy, innocent hours spent in its cultivation? O! who can forget those days, when, to announce a bud, or the coloring of a tulip, or the opening of a choice rose, or the perfection of a full-blown peony, was glory enough for one morning? Who can forget the flowering vine planted by his mother's own hand when he was a little child?

The cultivation and study of flowers appears more suited to females than to men. They resemble them in their fragility, beauty and more tender nature. The Mimosa may be likened to a pure-minded and delicate woman, who shrinks from the breath of contamina-

tion; and who, if assailed too rudely by the finger of scorn and reproach, will wither and die from the shock.

A taste for trees, and plants and flowers, is the love an enlightened mind and a tender heart pays to nature. It is a peculiar attribute of woman, exhibiting the gentleness and purity of her sex; and every husband should encourage it, for his wife and daughters will prove wiser, and happier, and better, by its cultivation. Who does not venerate and love some tree, or rose, or honeysuckle, planted, it may be, by the hand of some absent or departed mother, or sister, or brother? and who would not protect them with a holy reverence as mementoes of a hallowed love, as well as contributors to the gratification of an elegant taste?

In reply to the question asked by the coarse and ignorant, What is the use of flowers? Cobbett asks another: What is the use of anything? There are a variety of things pleasing to the eye of man—some of them expensive and not within the reach of all; but flowers may, without much expense, be possessed by the humblest individual. Their cultivation may be made one source of happiness to the family. Let heads of families gather around them every source of innocent amusement and recreation for their children. They should endeavor to make their home attractive and lovely, in doors and out—a very paradise, if possible. All children have a natural aptitude to love and admire flowers, and we hope to make the dissemination of the *HORTICULTURIST* among their parents, especially their mothers, a means of advancing a greater taste in their children, both by reading about flowers, and illustrating them by our colored pictures of them.

LOS ANGELES wants a cheese factory.

THE PLEASANTNESS OF FOUNDING A HOME.

Whoever, in our State, has become the fortunate owner of a little nook of land, which he, by patient and wisely directed toil, is changing from a waste to a garden, must feel in some degree as if he was master of the new world. There lie the fresh furrows, smiling to think of the secrets they hide—the fruit and leaves and flowers, the shaded walks and the sloping lawns; there the new master plans, in faith and patience, for the pleasant years to come. The building of a home is one of the purest joys left to fallen man; the laying out of beds and paths, the planting of little bushes in which imagination sees untold glories of bloom hereafter; the delightful sense of dominion which attends the new owner, busy with his improvements. These are, in very truth, the blessings which came softly out of Paradise with Adam, and have followed his wandering children ever since.

The perennial freshness of humanity is revealed in this desire for rural homes. As every successive generation of children love to pull corn-silk, and tumble in the hay-fields, so every generation of busy, overworked men love to unfasten the chafing harness at times, and choose some happy spot where they may be new Adams, received again into Paradise—new dwellers in Arcadia. Our modern intense life draws men, in early manhood, to the centres of activity, but their hearts as they grow older, turn back to the grassy fields, the blooming gardens, the quiet breath, the country freedom, and they remember with deeper affection, the old farmhouse of their boyhood, the fragrant garden, and the fruitful orchard. Then that saving, long dormant love of the brown, friendly earth asserts itself, and so, in due time, there is a home planted.

It is usually far better to take a vacant lot, or neglected farm, and improve to suit yourself, than to pay fancy-prices for orchards and gardens, which can, in our climate, be so soon created. The essentials of a comfortable home are good water, good soil, and a healthful location. Beautiful scenery, varied surfaces, and if possible, a glimpse of the ocean or a river, add much to the value of the place; nearness to market and social advantages are important, of course; but every hope of success depends primarily on the character of the soil, and on the rainfall, or facilities of irrigation.

Men have a habit of stamping their personality on the clothes they wear, the team they drive, and the house they live in; but the grounds a man lays out and takes care of become in a peculiar way like himself. We love to notice the little improvements in every village, and make wandering guesses concerning the owners of each successive cottage. Altheas, lilacs, a damask rose, groups of pansies, and clambering wealth of sweet peas, with perhaps a sugar maple—evidently cherished—is in some way a suggestion of New England. A yew tree by the gate, a row of black currants along the fence, Shropshire damsons in the orchard—this is staid, portly old England, surely. Dill, saffron, yellow marigolds, odorous garlic, a row of horse beans, a door painted yellow, red and blue—this is a Portuguese family from the Azores. Bottle-gourds over the well, balsams and crape myrtles by the door, melons and gumbo in the vegetable garden—here is a picture from the sunny South.

Nor can even wealth, with its hired gardeners and endless resources, entirely conceal the hidden thoughts, the clinging memories, the long cherished ideals. The will of the master shall

cluster flowers as they grow in childhood's gardens; the trees of youth shall reveal themselves against the sunset fires. Somehow, in some sweet way, the man who learns the pleasantness of founding a home, will make it express many things, but always something beautiful. And it is the charm of California, in the eyes of all her children, that so many variations are possible here, so many different types of gardening succeed, and blend harmoniously in our landscapes.

THE HOLLYHOCK.

BY W. C. L. DREW.

Years ago, while floriculture was yet in its infancy, the tall, red Hollyhock—*Althæa rosea*—was to be seen in every garden; its tall spike, eight or ten feet high, showing here and there a single blossom, generally of a dull red color. How wonderful has been the change in its appearance since it became the sole property of a few energetic and true flower lovers, after it had been left to take care of itself, or die out, as the taste for finer flowers grew among the masses. For many years it was unnoticed, and almost unknown by the great majority of florists and amateurs; but within a few years, it has again resumed its place in many gardens, a changed and marvelously improved plant.

No plant exemplifies the effect of cultivation and hybridization better than the Hollyhock of the present day, than which there is no finer or more desirable ornamental perennial, or, more properly biennial. The improved Hollyhock has been reduced from a tall, straggling grower, ten feet or more in height, to a handsome plant, five or six feet high.

The sparse flowers from single, scat-

tered specimens, have been transformed into balls of beauty, completely encircling and covering the spike for from two to four feet. Instead of a few dull shades of red, we now have them varying in color, from the purest white, and most delicate pink, to the most brilliant crimson; from the clearest sulphur, to a deep golden yellow; from clear rose, to a purple so deep as to be almost black, the flowers rivaling in doubleness the finest rose or choicest dahlia.

The Hollyhock is properly a biennial, but by proper and judicious treatment, it may be made of perennial duration. The seed for the very choicest varieties, are propagated in this way. They should be sown as soon as possible in the spring; when the plants appear, thin them out until they are about one foot apart, and then allow them to remain undisturbed until the following October, at which time they should be transplanted to the place where they are desired to bloom. When the best growth and the finest attainable results are desired, the plants should be set in strong rich soil, which should be well stirred, and mixed with well decayed stable manure, in liberal quantity. When the flower stem appears—usually in June or July—it should be fastened to a neat stake, to prevent its being blown around and spoiled. If it is desired to preserve the roots for further flowering, the old stems should be cut off one foot above the ground in August. In September or October take up the root, divide it with a sharp knife, and reset it in fresh, rich soil. In this way the plants may be continued for many years.

In planting Hollyhocks, a great deal depends on the proper situation. As the flowers are large, and the stems erect, the plants produce the best effect when grown in rows at the back of the

border, or an avenue of Hollyhocks, with a back-ground on each side of some foliage shrub with bright green leaves, is one of the finest sights to be desired. A circular bed in a lawn, in which are set from three to five plants, is, if no other flower beds are near, very unique and fine; the bed may be edged with cannas, with pure green foliage.

One great advantage to the amateur is the close approach to certainty with which the choice double strains will come from seed, for at least fifty per cent. of the seedlings, from good seed, will be double. All semi-double and single-flowering plants should be removed as soon as noticed, to prevent the seed of the double roots being deteriorated by their proximity.

Chater's English Prize strain of Double Hollyhocks, is the most beautiful, and while the seed costs higher than other strains, it should be obtained, where possible.

HEALTHFULNESS OF FRUIT.

No intelligent person can doubt that the free use of ripe fruit is conducive to health. On the other hand, it is obvious that fruits as an exclusive article of diet do not meet all the wants of the system. The chemistry of the apple, the pear, the tomato, the grape, etc., is well understood, and it can be stated how much nutriment or assimilable food each is capable of affording; but this does not answer all the questions connected with the subject of the healthfulness of fruit. Besides furnishing nutriment, fruit exerts other influences upon the animal economy of the highest importance. The acids of fruit are not properly nutritive substances, but they produce physiological effects of a cooling or corrective nature which are highly salutary.

Fruits are largely composed of water, and this fluid has come to them through extraordinary channels. The tiny root-fibres have collected it in the dark earth, and by vital action it has been forced through the most minute tubes, until it is finally deposited in the fruit cells. So far as we know, the water undergoes no modifications; it is water in the soil, and it is the same in its wonderful associations in fruits. It however holds saccharine elements and other principles which modify its physical appearance and taste. The great amount of water contained in fruits is in itself an advantage, as it aids in cleaning the alimentary canal and the other excretory ducts, and thus promotes healthy action.

Fruits are capable of sustaining life for long periods, but the lack of the nitrogenous elements detracts from their strength-giving power, and any one living exclusively upon them would not be able to labor effectively. We have heard of the man who rowed his boat along the entire coast of New England, sustained alone by whortleberries; but if the voyage had lasted six months, or even three, his nerves and muscles would have entirely failed him.

The past year was a season of abundant fruits. Perhaps never in the history of the Northern and Eastern States were apples more plentiful. We were glad to sell the products of our orchards at about twenty cents a bushel. The present season promises as good. The rich and the poor can indulge in this noble fruit, to the greatest possible extent, at small cost. If the fruit is largely consumed, in connection with a proper proportion of animal or nitrogenous foods, a much higher standard of health will be attained among all classes.—*The Boston Journal of Chemistry.*

THE IDEAL STRAWBERRY.

From a private letter from Secretary Garfield, we take the liberty of extracting the following—forceful as it seems to us—remarks:

“I wish the men who are at work improving the strawberry would have an ideal berry in view, and work toward perfection in something better than mere size. For the home or family use we need not look very much to the firmness of the berry; but we want fair size and the best quality we can secure in the fruit, and to this should be added a comeliness of form and height of color that will attract the eye of an artist. The newer berries are lauded principally for their size, as if this were the main consideration. I like size; but when quality is sacrificed, magnitude is below par. The strawberry is a luxury, and I believe in combining in it as many good qualities that please the sense as we can get. I get just as much eye satisfaction out of a fruit as out of a flower. The other day I found, in Mr. Parmelee's orchard at Old Mission, the most beautiful specimens of Red Astrachan Apples that I ever saw. I brought them home and placed them on the mantel shelf. They were as delicious as they were beautiful, and I was laughed at by my family for leaving them until past prime for eating. But I had greater pleasure in the lengthened eye-satisfaction than I would have enjoyed in gratifying the taste. So in strawberries; it seems to me in many of the newer sorts we have neglected the real elements of beauty, in getting size simply, or flavor simply.

One point more is not thought enough about, and that is, “What constitutes the best flavor?” Almost all will hit upon the same form as the ideal, but just what gives the best flavor is not

thought about so much. My own impression is that the acid of the strawberry is not given enough credit. People make wry faces and cry “sour berries!” when the sour in a well ripened berry gives it the tone. The fact is that the firm berries are those which are the longest ripening throughout the mass, and the market berries are decried as sour when they are simply green and not modified by perfect ripening.

GRAND RAPIDS, Mich., Aug. 30, 1878.

The Longworth Prolific Strawberry, the most universally cultivated here, possesses many qualities which entitle it to great value. It is firm, which is a necessity for carriage to market; of a fine and rich color—light crimson—and its form, though rather irregular, is generally handsome; and although its flavor, even when fully ripe, is not of the highest, and as luscious as some few others, it is a very passably good berry. Its acidity is a prominent quality in it, but which is not at all objectionable, and is indeed an advantage, when the article of sugar can be liberally used, and which renders the natural flavor it possesses very much heightened. It is hardy and prolific and stands irrigation very well. It should not be gathered before it is ripe, but it is brought early into market in its season in order to realize the most profit.

SEEDS AND SEED PLANTING.

BY CHAS. H. SHINN, NILES, CAL.

The beginning and the end of plant life are in the seed. Nothing is so nearly a constant miracle as this endless round of nature, from the planted seed, through the leaf, stem, blossom, and forming germ, to the ripened seed of another generation. A deep interest surrounds every step of the process, so often seen, so seldom carefully studied

Noiselessly when the first rains of winter come, all the brown slopes thrill and quiver with countless budding blades that climb from hidden seeds. Noiselessly, too, over all the new-plowed, smoking acres, the promise of the harvest springs into being; the seeds of old-fashioned flowers in the little gardens begin to found their palaces, and rear their tinted spires, on which, in due season, their banners of blossoms shall wave. By the low marshes, where the Sedges and *Mimulus* grow; along the rivers, bright little *Lupines* and *Gilias*; in our deep gulches, fit home of *Trilliums* and *Aristolochias*, of *Calycanthus* and *Azaleas*; on the long mountain slopes, sown with blue *Nemophilas*, and countless growing bulbs—everywhere the glad germs of spring, and the world laughs into leaf and blossom.

Men have learned to produce this miracle of germination at their own will, by imitating nature's conditions of heat, moisture and darkness. So, mainly by seeds, which retain their life for a considerable, though varying period, and can be easily transported, we are enabled to possess the plants and flowers of every land; some of them to brighten our conservatories, some to give an added grace to the garden, and some to become field products, and so increase the wealth of the individual, and the prosperity of the State. The history of the introduction of many seeds, now common, reads like a romance—the romance of horticulture. Ardent collectors have risked their lives to gather and preserve seeds; the strangest accidents have scattered them; they have been carried in unknown ways, and suddenly have appeared in new places; kings have made treaties for them, and have planted them with their own hands. As

Tennyson held the "flower from a crannied wall" in his questioning hand, feeling that if he could only read its story the secret of the world would be known, so might we take the shelly seed of some Indian Palm, or tropic Cycad, and ponder long upon the life that lies hidden within it, the dormant cells, the starch and albumen, and nice provisions for covering. In such moods the work of the gardener and of the farmer seems to run parallel to the very fibres of being—in truth a simple and holy work.

But after we have thought of the wonderful things connected with the beginnings of plant life, we must proceed to put a practical point to our article. Given the seed—this brown mystery—and how shall we set it at work; how shall we rouse its dormant energies; what are the "laws of germination?"

The secrets of starting seeds are very simple; warmth and moisture are the two essentials. These must be applied evenly, steadily, and with patience, for they are as important elements in sprouting seeds as pork and beans, beans and pork, were in our miner's typical dinner. The mechanical condition of the soil is of great importance; it should be light, mellow and healthy.

Flower seeds are best sown in boxes, two and one-half inches deep and one foot in length and breadth. Cut small holes in the bottom for drainage, and fill the boxes with prepared soil. Just here the amateur begins to be puzzled, if he has consulted a series of authorities. Peat, loam, silver sand, compost, sods, leaf mould, variously compounded—these look mysterious enough, to be sure! But there is in practice a simpler way. Take any garden soil as a basis, and mix with it sand, and the light mould from under an old straw

stack, or from the hollows on mountain sides where leaves drift and decay, until you have a light rich and friable soil. No definite rule respecting the proportions can be given, except that the prepared soil should hold moisture well, should have no tendency to become hard, and should never crack, even if in the sun.

Fill the boxes carefully with moist, but not wet earth, and, with a small board, press the soil evenly and closely, so that it will retain moisture better. The board must be planed on the under side, or the soil will stick to it; and it will be found convenient to nail a little handle on the upper side. Sow your seed broadcast, if you are sure the soil is not weedy, and if you will know the plants when they come up; but, in general, it is best to sow in marked rows, in all cases scattering the seed evenly. Now take a sieve, made by tacking a square of one eighth inch mesh wire netting to a light frame, and sift light soil, which has been rubbed and well mixed, over the box, until the seeds are just covered. Take the little board again and press the soil carefully. If any seeds are in sight, sift a little more dirt on and press again. Small seeds must never be covered more than their own thickness; the surface must be level and firm; keep it damp, but not dripping, and you will succeed. Countless thousands of seeds perish from too deep planting. The chief uses of covering are to preserve moisture, and to keep the seed in darkness during the germinating process. Very fine seeds must be sown on carefully sifted earth, which has been sprinkled before the sowing is done. Cover the box with a pane of glass, and if it looks dry, spray it with a brush dipped in water and drawn lightly over the edge of a stick. Be careful to wipe the under

side of the pane of glass occasionally, or the moisture may be so much as to rot the seeds.

The seed-boxes must be set level, for otherwise the constant tendency is to wash the light seeds all to the lower side, and destroy many while sprouting. The soil must be equally pressed all over, or else watering will cause some portions to sink lower than others, and so form little puddles, which drown part of the seed. The watering must be done with a fine rose held so that the soil does not wash away, for this, too, is a fruitful cause of failure, and the time for watering must be in the evening or early morning. Still, if the boxes look dry at any time, water them and shade from the sun, which will harden the surface and slaughter the hopes of the coming plants.

(To be Continued.)

THE NASTURTIIUM.

If I could have but one species of flowers in my summer garden, I would have Nasturtiums. I admit freely that the rose is more beautiful, the heliotrope more fragrant, the pansy more exquisite of hue, the sweet pea more delicately graceful; but the crisp and sturdy nasturtium, if it claims no quality in a pre-eminent degree, is still so attractive in many ways as to be one of the most satisfactory of flowers.

It is very easily cultivated. The seeds are so tenacious of life that, planted early or late, deep in the soil or scarcely covered, they are almost sure to send up within a week or two a pair of round green leaves. Scarcely has the seedling made any growth before tiny buds are formed, and some bright June morning we are surprised to find a gorgeous bit of color amid the tender green foliage. From this time we are

never without flowers for our vases, for the nasturtium is a most prolific bloomer and the more flowers we cut or break off the more buds are pushed out, and this continues till the vines are killed by the Autumnal frosts. The nasturtium will thrive in any soil and in any weather, being in this respect far superior to the sweet pea for those who love to have a few flowers about their doors, but who are too busy to devote much time to their culture. And with what wonderful rapidity do the vines grow in rainy weather! If we have been kept indoors for a day or two by the rain, when we get out again to look after our plants we can compare the nasturtium vine to nothing save Jack's beanstalk. Even while the summer rain is falling, if we wish to decorate our rooms anew or to have a few flowers to brighten the dinner table, we may sally forth in waterproof and rubbers, and gather the half-open nasturtiums, with their dripping green leaves, and we shall find them as beautifully fresh and lovely as Venus emerging from the bath, while most of their floral sisters, dishevelled and rain-soaked, are hopelessly ruined and utterly void of beauty.

Nasturtiums are especially serviceable for decorating rooms, for several reasons. They do not close in the dark or at night, as many flowers do; they keep a long time before withering, and they offer a great variety of hues, from the pale lemon to the dark crimson. Among the loveliest are the parti-colored flowers, and those who cultivate them, the year after from seed of their own saving, can hardly fail to be surprised at the new shades and variegations that are constantly appearing. Many persons combine them in bouquets with other flowers, but to my mind they are far more effective when combined only with their own beautiful green leaves.

And it is worthy of remark that the foliage is scarcely ever attacked by insects, but can almost invariably be found in perfection accompanying its flowers. A few brilliant nasturtiums, each accompanied by its own stalks and leaves arranged in a slender vase on a bracket in the shaded summer parlor, form an exquisite bit of ornamentation. The background of delicately-tinted wall brings out the graceful forms of the flowers and the beautiful dark foliage with charming effect.

The nasturtium possesses yet one other claim to our consideration. It is not often that one can assert for a garden pet that it is useful as well as ornamental, but it is possible in this case, for if we have more seeds than we wish to save to plant another year, they form, pickled, a most delicious condiment. There are few households in which a jar would come amiss. It is, perhaps, a somewhat singular mingling of the realistic and sentimental, to sit at the winter breakfast table as the white flakes flit by the window, and to have the agreeably pungent flavor of the tiny pickles remind us of the departed bloom that brightened our little world in the bygone mid-summer days.

Its edible quality is I doubt not, its sole redeeming feature in the minds of some practical housekeepers. But whether so or not, surely no one can deny that the nasturtium is a plant to suit all tastes.

The Poppy grows so luxuriantly in California, and the process of making opium from its pod is so simple, that every year a little is made; but no profit has been found in it, though the quality is good. Among the experimenters this season is R. M. Dungan, of Santa Ana.



Rod and Gun.

FISHING IN WEBBER LAKE.

According to our usual annual habit, we and our nephew (joined this time by a brother of the latter, lately arrived from the East Indies), started from this city bent on a fishing trip to Webber Lake, in the northern part of this State, and close on the borders of that of Nevada. Before making up our minds for this point we had good and enthusiastic intelligence from some of our most reliable piscatorial friends that the above lake abounded in noble and brilliant specimens of the finest quality of brook-trout, averaging generally in weight from three quarters to one and a quarter pounds. In fully testing these assertions of our brother fishermen who had visited the lake, we happily found them to be correct, as our descriptions about to be made more in detail, presented in this paper, will, we think, entirely prove.

Our party took passage, at 4 o'clock P. M., on the Vallejo boat, on Saturday, August 17th, connecting with the Virginia Express train (having sleeping cars) to Truckee, which we reached early in the morning of the next day (Sunday), and which not being one of the days (Tuesdays and Fridays) that Webber stages leave Truckee for the Webber Lake Hotel, we hired a private

conveyance, and, after a most pleasant ride of twenty-four miles through a delightful country, partly through white pine, sugar pine and tamarack forests, and partly through rich pasture lands, reached the Lake Hotel at about 2 P. M. This house is open for visitors from June 1st to November 1st. It is delightfully situated among handsome pine and other trees, flowering shrubs and brilliantly-hued wild flowers, within one hundred feet of the lake, on the borders of which, near a small wharf, are good boats of various sizes convenient for fishermen. The beautiful lake, containing nearly 500 acres of pure, pellucid water, and surrounded by variously shaped picturesque hills, peaks and mountains of the Sierra Nevada, some of the latter having a few patches of snow on their sides and summits, and all partially clothed in pines and verdant grassy spots and patches, is 6,925 feet above sea level, and on the Henness Pass Road. The climate at this high elevation is mostly cool and bracing, and the air of the purest kind, preventing the exercise of rowing and fishing from being fatiguing or oppressive to the body or muscles, or the heat of the sun overpowering. The character of the scenery very much resembles that surrounding the famous Tahoe Lake, but on a much smaller scale. The sunrises and sunsets are most charming, the lights and

glows on the near and distant eminences, with the occasional cloud shadows and the reflection of the pines and mountains in the lake, being very enchanting.

The mornings and evenings are calm. A breeze forming a nice fishing ripple on the water, either for the fly or spoon fishing, rises about 9 A. M. Little can be accomplished in successful sport when the lake is calm, except a little before sunrise, when the trout are often found feeding in certain portions of the lake at this season on the very small greyish-white gnats or May-flies which abound all over the lake, but at that time of the day are to be seen in thick masses or patches, hundreds of the brilliant beauties rising and feeding on them voraciously, their numerous dorsal fins being shown on the surface of the water. This is a special time for the angler to cast his fly among them, when he is well rewarded for his early rising by capturing many of them also "rising" at early dawn and in good season.

The first young fish which were planted in the lake by Dr. Webber, the proprietor of it and the surrounding lands, were brought from Pyramid Lake, but these were found not to prosper well. The second lot (the present fish), were brought by him from a branch of Feather River. They are a pure species of the speckled brook-trout, differing a little in color and somewhat in form; some being silvery, others of a rich reddish hue, some longer, and a few shorter in their forms; but all brilliant and beautiful in complexion and shape. Their meat is of a light, pink color; of an exquisite and delicate flavor, and much like a two-year-old grilse or young salmon, but less rich and cloying. They are very game, and their "taking" furnishes all that agreeable sport and excitement that is so much sought after

by the ardent and energetic fisherman.

The first evening we arrived, my East India nephew and myself immediately took one of the skiffs and instituted a prospecting tour of the lake, ourselves rowing and our relative casting his three flies—the Palmer for a stretcher, and the two drop flies, the grey drake and jungle fowl. He was rewarded with the capture of twelve fish of the medium average weight—eight being hooked on the Palmer, and four on the grey drake flies. The next five days our relations spent at the lake, the writer operated, at intervals of his own, fishing at fly and spinning or trolling, as oarsman, and they being first-class fly-fishermen, he was amply satisfied in his position by witnessing their great success. They bagged, every day, from ten to twenty fish each, the particular time of their operating being considered by Mr. Anderson, our landlord, much inferior to what the fishing had been about four weeks previously, when two sojourners at the hotel, excellent fly-fishermen though, it must be said, captured 300 trout in the period of about eight days.

At the end of five days' delightful and satisfactory fishing, our friends took their departure for a three weeks' sporting tour through the northern portion of our State to the headwaters of the Sacramento, Cloud and Pitt rivers, for salmon and trout-fishing, and the pursuit, with the shot-gun and rifle, of fur and feathers in the larger game which that wonderfully prolific region offers to the enthusiastic sportsman.

As to ourselves, we remained at the lake, and continued to take in the fish even more successfully than before, by the use, chiefly, of a small, simple spoon of copper color on both sides and a triangle of small hooks, trolling from a boat with it at a distance of about 75

feet from the stern. We found this little spinning bait to excel any other spoon that was used in the lake, catching with it as many as 20 to 30 fish per day; although it was said by those who were well posted in the matter that the fishing at the time we operated was poor compared with what it had previously been.

In about a month from this, Mr. Anderson informed us that the gnats upon which the fish are now feeding will be succeeded by some other insect diet. These gnats come and fall like snow at some particular hours of the day and weather, and it is a very curious sight indeed to witness this phenomenon. Upon subjecting them to a common magnifier they appear to possess the form of the English stone-fly or May-fly, only very much smaller. They have the same two projecting long hairs from their tails which the English fly has.

There were several good fishermen, and sociable and pleasant companions at this very attractive fishing ground while we were there. One of them fished and rowed with us alternately in the skiff, and with him we left our most killing spoon above described. May he flourish with it gloriously!

And now we can not close our, we fear, too long-drawn-out piscatorial effusion, without saying a few words most truthfully and sincerely, we affirm, in regard to the kind attention and most agreeable treatment to all of us by our intelligent, active and indefatigable landlord and manager of the hotel, Mr. A. Jay Anderson. He and his amiable and industrious partner were incessant in their endeavors to make all feel at home and comfortable. The fare was very good, and everything clean and well-prepared, with the very important, and in both quality and quantity, rather

rare accompaniment, of plenty of clotted cream and the sweetest and purest of milk and butter. They milk eight cows, which feed on the rich and abundant grasses in the vicinity. The boats, fishing tackle, saddle horses, and wagons are furnished guests free of charge. The charges for board are reasonable, and if a guest, with plenty of fish, good diet, unremitting attention from the family at the hotel, pure air and lovely surroundings, can not make himself contented and happy here, he must surely be one hard to please. As to ourselves we consider this place one of the best for fishing purposes in this State, and, *Deo volente*, we hope soon to visit it again.

BAIT-FISHING FOR TROUT OR SALMON.

As there are, at times, circumstances which may justify the use of a bait, such as a worm, shrimp, grasshopper, or piece of fish, instead of the fly, in angling for salmon or trout, in either lake, river or brook, a few words regarding this style of inveigling the salmon family may not be out of place in the Rod and Gun department of our magazine, devoted, as it is, to sporting subjects. Of the various methods of angling with worm or any other kind of bait (each having its own advocates), we shall notice a few. One sportsman leads his line rather heavily, and, casting the bait into a likely situation, either waits patiently, rod in hand, until fortune shall bring it some roaming fish; or otherwise, perhaps he may lay it down upon the bank, and, quietly seating himself by its side, feel for his cigar or tobacco-pouch, and enjoy his *otium cum dignitate*, until a tug at the line announces that some subaqueous stranger demands an interview. In some cases, as at Oakland wharf for

grilse, or in the Ohio river for pike-perch, we have seen avaricious gentlemen thus busily superintending the operations of half a dozen rods; but their imaginations were doubtless roaming more in the direction of the frying-pan than the sport. Another, donning his float and line, betakes himself to some smooth retired deep, and attentively watches it glide along, until the long-looked-for bob gives notice, telegraph-fashion, that an aqueous friend tugs his forelock and bids him good morning. A third resolutely resolved to follow nature as his only guide, allows his bait to be swept swiftly along by the current, without either sinkers, or other paraphernalia, stubbornly maintaining that it is quite a work of supererogation on the part of the angler to attempt to modify in any way the manner in which a worm is carried down a stream in a state of nature, or to endeavor to guide it into any part of the water other than where the natural flow of the current will convey it; assuming that instinct will unerringly direct the fish to lie in wait in such places for their food. And doubtless the operations of this philosophical practitioner are entitled to a considerable degree of respect, as in small, clear rivers it is *the method par excellence*. But turning our attention again to the lazy gentleman seated on the bank, enjoying his pipe, and his heavily-leaded line lying motionless exactly in the spot where it was cast, it will require no sage to predict that he will be more indebted to good luck than skill if he takes many fish, unless the water is very populous indeed, and the fish as sharply on the look-out for food as a lawyer is for clients.

In regard to the float: in deep, muddy, still waters, in ponds or lakes, it may be used with evident advantage

to suspend the bait at a proper distance from the bottom, and to keep it in motion, and from lying dead on the bottom; but in all clear, shallow, or swift-running streams it is worse than useless.

The bait, once in the water, must be made to swim pretty near to the bottom, for large fish, yet it must not be suffered to touch or rest there, but be kept rolling gently along at some little distance from it by the flow of the current. To effect this in different depths of water and velocities of current, much judgment is required in the due loading of the line with sinkers, according to the varying depth and rapidity of the same. In comparatively still water, perhaps, no sinkers may be necessary, the natural gravity of the hook and bait being alone sufficient; but where there is considerable depth or any current exists, one, two, or more of No. 4 shot pellets must be placed from nine to twelve inches from the hook, and about three quarters of an inch from each other, so as to avoid exciting any suspicion on the part of the fish.

We have found it an advantage sometimes to append a second small-sized hook to the line as a dropper, about three feet above the end one, tied to a piece of gut four inches long. This, we think, gives two chances for one, and, so far as our experience goes, the dropper will take nearly as many fish as the main hook. We have had more than once a large trout gorge both hooks. Besides, this admits of two different kinds of bait being used, if thought proper. The end hook may be baited with a worm, and the upper with boiled shrimp or grasshopper, etc.

Trout seem to treat a worm differently in rapid and still waters. In the former they usually seize and swallow

it at once, as if aware that if not immediately secured it would be swiftly carried down the current and lost, while in the latter they generally lay hold of it first by one of the extremities, give it a shake, relinquish it for a second or two, then seize it again and gorge it; and if in a shy mood, they will mouth it half a dozen times or more, before they do so, or perhaps finally leave it altogether.

In fishing in a lake or still pool, the presence of a fish will be indicated by the line being once or twice sharply tugged, and then probably being run off with across the water for some distance. In this case always wait until the second or third tug is given before striking, as the bait will be several times mouthed before it is gorged, and it will even be the safer practice to delay striking until the line decidedly begins to be drawn steadily away, when the first twitch may be given, and the fish will be yours. More fish are lost in still pools or lakes by fiery-tempered spirits than is generally known. It is true that there are cases when, having a bite, and snapping or striking at once a fish may be hooked safely somewhere in the mouth, but we consider this the exception only to the rule.

It will, doubtless, have happened to every experienced bait-angler that, on certain days, the fish are usually shy and more disposed to play with the bait than swallow it, when they will perpetually torment him by mangling and rejecting the worm, or ripping off its free extremity, so as to render frequent renewals necessary.

A good plan is, sometimes, simply to play the bait across the water, precisely as in minnow spinning, with the line rather heavily shotted. If this is faithfully persisted in, the angler is seldom disappointed with fish.

The rod for worm-fishing should be both longer and stronger than the regular single-handed fly-rod, and not less than fourteen to fifteen feet in length. A light salmon-rod of sixteen feet makes a very efficient implement. An extra stiff top-piece to the fly-rod is sometimes used, in lieu of one for the special purpose; but, like most other substitutes, it never does the work in the same efficient style. A rather long rod, in this kind of fishing, not only gives the sportsman a much greater command of water, but it enables him to keep his jolly countenance out of sight of the fish. A certain amount of stiffness in the rod is also essential, in order to play the bait properly and strike a fish with quickness and firmness when he seizes it, so as to fix the hook in any part of the fish's mouth, especially in that which is bony. Of course, for very small brooks, in "dipping," quite short rods are necessary.

The gut-line, or hook-cast, should consist of one and a half or two yards of the best round gut, thick and strong at the top, and gradually tapering off finer towards the hook.

The hooks ought to be of the straight round-bend kind. They ought to be rather *small than large*, in proportion to the size of the worm or other bait used. All the hooks used in worm-fishing should have their shanks shortened, by which their presence will not be so easily detected, and the worm will appear much more natural than in the constrained and unyielding shape it assumes when skewered upon a long-shanked hook; hence they will be more freely taken in all waters where the fish have a considerable personal acquaintance with the angling fraternity.

Under ordinary circumstances, during the heat of summer, the worm is used with the best results early in the morn-

ing, from daybreak to 8 o'clock; and again in the evening, from sunset to darkness. The worm is also generally good towards the end of summer, after the majority of the various tribes of insects—which formed the chief food of the fish during the height of the season—have disappeared; or when they seem to be saturated with an excess of such diet, and resort again to bottom food, it may be used with advantage all day long.

WHY FISH ARE SCARCE IN THE BAY.

The amateur angler, who for the last five or six years has been accustomed to cast a line into the bay, of late finds the sport so dull that it is not worth the pursuing. His labors are seldom rewarded with fish enough to pay for the time spent in their capture. He has been told that some 30,000 seals and sea lions keep watch at the entrance of Golden Gate and levy a tax upon the entrance of the finny tribe to the extent of about seven pounds each per day. This is accepted as true, but the seals and sea lions were always there, and some other reason must also be assigned for the rapid diminution of the fish in numbers. Happily we are in possession of the facts to furnish it.

A short time since officers Rosekamp and Prescho made a descent upon a Chinese camp, and gathered in a number of violators of the fish law. They were taken in the act of drawing their nets. These nets are set and lifted every six hours. The meshes are so small that a large-sized straw will scarcely escape through them. At every catch the nets yield from three to four tons of fish, the larger of which are put into baskets, and the balance, about two-thirds of the whole number, thrown upon the beach to die. Twenty-

one large baskets of fish were captured with the Chinamen.

Some of the very smallest of the refuse fish were brought to the *Call* office for inspection. The lot comprised smelt, sole, rock-cod, tom-cod, codfish and shrimps—all choice varieties, when full grown, in the market. The Chinese have a fashion of drying small fish on the sea beach, from which they supply the local Chinese demand, and then send the remainder to China. Every out-going steamer carries its fish cargo. The last steamer took no less than 150 tons of shrimps, which is about the average monthly shipment. The Chinese export large quantities of shells, used in China to fertilize the soil. We are told that a gentleman who owns a tract of land fronting on the bay, gets \$1 per month from each Chinese fisherman, for the privilege of using the adjoining beach to dry fish and mend the nets. From this source, it is said, he realizes \$1,200 per month. In the face of these facts, we no longer wonder why fish are scarce in the bay. Supposing a couple of tons of the very smallest fish be cast upon the beach daily (and the number of destroyed is known to be much larger, for it is estimated that from ten to twelve thousand Chinamen are engaged in the fishing trade), we would have a destruction of 60,000 tons of fish every thirty days, or a destruction of 720,000 tons per annum. Now, if we knew just how many of these little fishes a ton contained, we could tell how many millions are destroyed in the same length of time. Is it not about time a stop was put to this unlawful and wanton waste?—*Call*.

A tree, which was lately cut down in Kansas, contained three swarms of bees and over 200 pounds of clear pure honey.

Selected Articles.

FLOWER VOICES.

BY CHARLES H. SHINN.

Once in the night I heard
 The heart of summer stirred
 By words with music laden,
 Adrift, the shadows through,
 As if each flower maiden
 Were singing in the dew,
 And telling all the twilight
 Of some new added grace,
 Some gift of stars and silence.
 I leaned with longing face,
 Half sad, for music troubles so
 The one who hardly reads
 Its swaying undertone,
 But yet hears sobbing needs
 That in his soul have grown !
 Then, rising, I stepped down
 The narrow oaken stair,
 And breathed a broader air
 Than my low dusty room ;
 The nightly courts of gloom
 Were full of love and cheer,
 A faint wind past me blew,
 All music crept more near.
 I shut the door behind,
 Outreaching hands to find
 The voices that came through
 My window coiled with vines—
 Rhythmical beat of oars
 Dipt in an ether sea.
 Infinite chant of song,
 Passionate, pure, and free,
 Musical voices low,
 And bits of blossom talk,
 Airily come and go,
 Dreamily rise and fall,
 Happily laugh, and call
 Over the garden walk !
 So through the fairy bowers
 I pass, to search for three
 Flower faces pure and wee,
 Three souls that comfort me
 In the still daytime hours.

Down by the westward gate
 There sits Campanula,
 And nods her tinted bells,
 And sings as one elate
 That hath an inner star,
 And heart with love deep freighted,
 That long indeed hath waited,

And hears a step, not far ;
 Then, with a sudden singing
 From tiny bells outringing,
 I saw Campanula—
 She bent so sweetly over,
 And kissed her fairy lover,
 Behind a slender bar
 Of netted scarlet clover !

Wavy, and tall, and fair,
 Bright in the shining air,
 Binding her yellow tresses
 Over her scarlet lips,
 Lost in a swift eclipse
 Then gleaming out again,
 As after misty rain

 The sun with keener lances !
 Who is the beauty there.

 Wild as a forest queen,
 With robe of glossy green,
 And tendrils in her hair ?
 O my airy C. ematis,
 Half entreating for a kiss

 The tree that bends above you ;
 How you toss your playful head,
 By the dew-drops diamonded,
 Then grew tender with, " I love you ! "

Underneath the hollow night
 Was a tiny circle white,
 And a little maiden simple,
 Clad in fairy cloak and wimple,
 Never a word of love had she,
 Never lover knelt to her,
 But her eyes were a sea
 Sleeping in Italian skies,
 Fragrant with a wind of myrrh,
 And with color music wise ;
 Yet across her eyes were blent
 Something that was half content,
 And half eager wonderment.

Oh ! the simple Violet,
 Spotless in her maiden grace,
 Oh ! the weird quaint faces
 That the darlings daily lift
 In the old remembered places,
 In our childhood's haunted valleys,
 Where the deathless sunlight dallies,
 And memorial hills are white !
 A faint far trumpet blown,
 An eager sweet farewell,
 And the happy fairy spell
 From all the land has flown !
 Only the moonlit silvers
 Each weeping bloom and tree,
 The stars with lifted faces

Are weeping silently.

Then, while the earth is dreaming
Of dawn with golden hair,

I tread the curving pathway,

And climb the narrow stair.

NILES, July, 1878.

FRUIT IN THE FOOTHILLS.

From all the foothill counties come reports of large crops of fruit. The yield is also stated to be of excellent quality. The valley counties this year do not report such prolific crops, and in several instances the fruit is not of the usual first-class. San Joaquin and some other counties report that pears have deteriorated this season, and that apples have suffered more from maggots than in previous years. There are no complaints from the foothills. The grape crop is short, or suffering from mildew in Sonoma and Los Angeles. But all the accounts of grapes from the foothills are satisfactory. The crop is large and the quality excellent. Taking the fruit crop generally, the impression prevails that the yield will be short in all those districts which suffered from drought last year.

It was the custom some year or two ago to assert that fruit-growing was being overdone, that the growers would find no market for their produce. But such is not proving the case. Nevada and Placer counties find a ready sale for all their fruit in the State of Nevada, with occasional shipments to the East. In El Dorado and Amador fruit-drying and canning establishments have been started on a large scale. The receipts at these establishments for the season will amount to several thousand tons. The prices paid by them are represented as remunerative to the orchardists. There are hundreds of thousands of acres of land in all the foothill counties adapted to fruit growing, which, if not

open for pre-emption settlement, can still be obtained at moderate rates.—*Bulletin.*

JAPANESE GARDEN PLANTS.

There is no country so rich in desirable plants which are suited to our climate as Japan. Witness the vast number of shrubs, flowers, and evergreens which have that distinguishing appellative, Japonica; and there is no country in which artificial gardening is universally carried to such lengths. The showy and beautiful *Lilium Speciosum* in its many forms decks the woodlands and hillsides, and the lovely *Auratum* is grown as a vegetable, the bulbs being used as we would Jerusalem Artichokes, and the variety of other lilies and kindred plants which flourish in this country is endless. The *Chrysanthemum* is the national flower and grows to a gigantic size, as well as many other curious tassellated and other forms now familiar to us. A conventional representation of it is the crest of the Mikado, and the flower and stalk both appear on their new coinage, where it divides the honor with the *Paulownia Imperialis* of Kiri, which, on account of the distinctness of its annual rings, was formerly used for measuring periods, being planted at the birth of a prince and cut down at his death, when the number of rings gave the years of his age. Its wood is distinguished by its extreme dryness, a valuable quality in a climate that is damp for a great part of the year, and it is therefore used for sword-scabbards and boxes for the preservation of articles liable to rust. The *Sacura* or double-flowering Cherry (*Prunus pseudo-cerasus*) is cultivated everywhere for the beauty of its flowers, as is also the dwarf double-flowered Almond (*Prunus sinensis*). The fruit bearing-Cherry is

almost unknown, and one can not give a Japanese a greater treat than a dish of fine cherries. No one who has examined Japanese porcelain, lacquerware, stuffs or colored prints can have failed to have observed what an important part the double-flowering cherry (all flowers and no leaves) and the parti-colored, cut-leaved and variegated maple foliage play in their landscapes and decorations. The early spring, when the country is ablaze with the blossoms of the double-flowered cherry and almond, is a time for universal excursions, picnics, and frolics. With their portable fire-boxes, tobacco receptacles, spirit cases, and picnic baskets, the whole family goes afield and makes a day of it. The Japanese hunt as earnestly after botanical novelties as any of us. It seems strange to them that we think so much of a table vegetable like *Lilium Auratum*, but an accomplished Japanese in the interior of the country, who was taking an American friend over sword-blades and ivory carvings, finally exhibited as a great curiosity an ordinary soda water bottle (glass is not common in Japan) and bringing him into his garden, which was a little paradise of fantastically trained trees, flowers, rockeries, and cascades, expected supreme admiration for a plant of variegated Kale and English Daisy—an ever-blooming *Chrysanthemum*, he called it—which were languishing side by side in flower pots.

THE GOLDEN RETINOSPORA.

This is sometimes called Japan Cypress and Japan *Arbor-vitæ*, and of the two, the last is most correct, for the reason that *retinosporas* all graft tolerably well upon the American *arbor-vitæ*, and in other ways evince close relationship with that evergreen. It is

indeed remarkable how entire species of plants in Japan offer strange likenesses to our own trees and shrubs on the Atlantic coast, without being in any sense the same. Probably similarity of climate and soil have something to do with this resemblance. The *Retinospora plumosa aurea*, however, is a plant most distinct of its kind—verily *sui generis*. Until its advent, we held to the golden yew as most perfect of golden evergreens that have proved successful in America. Yet it has been found that drawbacks to even the golden yew exist, for they are really golden during a very few months of the year, while the tree is vigorously growing. Again, yews are hardly satisfactory plants in our climate. Usually they are quite hardy, but peculiar seasons will, once in a while, brown them if planted in exposed positions. They rarely, if ever, die from the effects of cold, but nevertheless a taint of tenderness attaches to them; and people, forgetting that sheltered positions will obviate this difficulty, turn away from their velvety gold as something useless and fatal.

The only other golden evergreen that can at all take their place is the *Retinospora* under notice. Most satisfactory reports of its hardiness come from all sides, and if we can not say that it never suffers in winter, we can, at least, claim that few, even of our evergreens, surpass it in this quality. A new plant is, in fact, obliged to pass a harder ordeal than older varieties. The spruce and hemlock might die from the same causes, again and again, with less injury to their reputation than a single sign of weakness would prove to the Golden *Retinospora*. It is well, perhaps, that new things should receive severe tests before acceptance, only equal chances should be given in positions as nearly alike as possible before

condemnation or approval is declared. There are other very beautiful golden Retinosporas, but *plumosa aurea* has acquired the name golden by common consent, on account of better known qualities and general usefulness. It is somewhat dwarf, but in time acquires quite fair dimensions. Bushy and compact, its thick foliage yields fine results under the skillful application of the pruning knife, rivaling the yew in the facility with which it thus assumes various shapes. The existence of these qualities has suggested its use as a dwarf ornamental hedge plant, occupying somewhat the place of box. For many years it may be kept quite dwarf by the use of shears, and, unlike most evergreens, continue healthy and vigorous under the ordeal.

Another way of presenting its beauties with the greatest effect is to group either one plant or three plants, with dwarf and darker evergreens around, such as the broad-leaved hemlock and others. The contrast made is very fine, and quite conspicuous on the lawn. Instead of taking common arbor-vitæ and hemlocks to fill the ornamental vases so much used in cities and their suburbs, it is a wonder that this golden Retinospora is not more employed for such work. Always bright at any season of the year, it is much more fit to succeed the showy leaves and flowers that occupied the vase in summer, than the dull hues of ordinary evergreens. As a lawn tree, as a hedge plant, and for purposes of decoration, we find the golden Retinospora of great value, not to speak of the farther recommendation that it can be propagated easily and sold cheaply. It is strange that choice new plants require so much time to win their way into public favor. This Retinospora has been known in America many years, but acquires fame slowly.

We imagine the only remedy for this is a more general determination to visit nurseries, and judge of plants in their growing state.

AN INCURABLE PEST.—I may as well at this point state briefly what the general impression seems to be concerning the phylloxera, although I prefer to delay making many observations on such subjects until I am better informed and have gathered abundant data. In future this subject will be treated fully, and possibly I may have to modify what I may write now.

For the benefit of the general reader, let me say, simply, that the phylloxera is a small insect which attacks the tender roots of the vine and causes great destruction.

A large prize has been for a long time in Paris awaiting some successful scientist or inventor who shall demonstrate some cheap and practical method for resisting the plague, but nothing has yet practically succeeded.

Practical men in large wine houses tell me in a few words there is no cure for the trouble, and that they are looking for the time when the plague will disappear, just as the farmers in our Western States look for the disappearance of grasshoppers after a period of devastation. I have met people from Minnesota who claim that it was the Governor's proclamation calling for a day of fasting and prayer which put an end to the grasshoppers in that State. Perhaps the French might try fasting and prayer. I make the suggestion; if they adopt it, and it wins, I shall claim the prize.

Chemists talk about sulphide of carbon as the best remedy; but the practical wine men say that this remedy is both ineffectual and too expensive.

The only practical suggestion that is

made is the simplest one, though it may not always be applicable, viz.: Soaking the ground in the vineyards with water. A large vine grower informed me a few days ago, that the phylloxera was not found in wet ground, and that soaking the roots for a brief period would destroy the insects. I shall give this a careful examination when I visit the vineyards.

I am told that there are only certain districts affected by the plague, and that in those districts none of the different varieties of vines resist it. In Spain it has not yet become very troublesome. Possibly climate and soil may have something to do with it. One grower tells me that vines in sandy soil are not so much affected.—*Paris Correspondent.*

HOW TO GET RID OF FLIES.—We believe that the witty man of the Burlington *Hawkeye* was trying to be serious when he wrote the following paragraph: "A few years ago, a Philadelphia clergyman discovered an antidote for flies, or, at least, he says he did. He had occasion to change his abode. We do not know just what the occasion was. Probably he could not pay the rent, or, perhaps, his relatives out West, who were coming to see the Centennial Exhibition, found out his address, and wrote to him that they could not endure life any longer without seeing him, and would visit him all summer—at any rate, he moved. He had in his house an abundance of house plants, and sent them to the new house the day before he moved. Immediately he was beset with swarms of flies, although he had previously enjoyed perfect immunity from these pests. And when he got moved, and settled down among his window plants again, the flies ceased to trouble him. It is a simple and very

pleasant experiment. If it fails to drive away the flies, you will, at least, succeed in filling your house with plants, which is a pleasant thing to do, as it will keep you employed all the time in caring for them, and you will have plenty of time for vain regrets when the plants all freeze along about Christmas. But there may be something in it. We have the word of a clergyman for it, and we do not see why even a clergyman should tell a fib about such a little thing as a fly."

PERFUME AND HEALTH.—An Italian professor in his investigations relating to the effects of vegetable perfume on the atmosphere, by converting its oxygen into ozone and thus increasing its oxydizing influence, says:

"The essences found to develop the largest quantity of oxone are those of cherry, laurel, clover, lavender, mint, juniper, lemon, fennel, and bergamot; those that give it in smaller quantity are anise, nutmeg, and thyme. The flowers of the narcissus, hyacinth, mignonette, heliotrope and lily of the valley develop ozone in closed vessels. Flowers destitute of perfume do not develop it, and those which have but slight perfume develop it in small quantities. Reasoning from these facts the professor recommends the cultivation of flowers in marshy districts, and in all places infested with animal emanations, on account of the powerful oxydizing influence of ozone. For this reason, he says, the inhabitants of such regions should surround their houses with beds of the most odorous flowers."

GERANIUMS AND SNAKES.—Snakes, it is said, may be driven away from the garden by planting plenty of geraniums. The geranium genus, as is well known, possesses a volatile oil in greater or less

proportion and also a variety of odors. These are said to be obnoxious to serpents. A missionary of South Africa had his parsonage surrounded by a narrow belt of geraniums, which effectually protected the residence from all varieties of snakes, and in South Africa the Caffir people thus rid their premises of snakes. Nevertheless, in temperate countries there are very few venomous serpents, and the innocent species are not only innoxious but of great use from the insects they live on. So don't plant geraniums to drive away snakes, but plant them for their intrinsic value and beauty.

THE VARIATION OF LEAVES.—By "variegation" must always be understood abnormal coloring, the most common forms of it being bands, blotches, edgings, and splashes of creamy white, or olive gray, or yellow, or several shades more or less intermixed with the normal green common to the plant when it is not variegated. The variations of variegations are endless, but there appears to be a common cause for them all, that cause, whatever it may be, operating in a variety of ways, so that in one case it results in white, gray, or creamy colored variegation; and in another case in amber, gold, yellow, or even deep orange colored variegation; the self-same species of plant being, perhaps, the subject of its diverse operations. The ivies, hollies, and Japanese euonymus afford examples familiar to all, and are admirably adapted as material for the study of the subject. A vague application of the term "disease" is commonly accepted as explaining the cause of variegation. In one view of the case we may be disposed to regard it as a kind of chlorosis, and in another as unmistakable etiolation. Usually it causes, or is accompanied, or

is followed by a diminution of the vigor of the plant, but some variegated plants grow as freely as others of the same species that are not variegated, and, generally speaking, the vigor diminishes in proportion to the degree of etiolation, so that a growth purely white can not be propagated, and soon passes away. That the variegated portion of a leaf has less vigor than the green part is suggested by the often wrinkled appearance of it, the result of a more rapid growth of the green centre than the variegated margin. This suggests that the defective assimilation, the result of debility, is the primary cause of variegation, a view of the case largely supported by the experience of cultivators, who have often produced variegation by starving a plant and effaced variegation by liberally feeding it.—*Gardener's Magazine.*

THE TOMATO.—Too much can not be written in favor of this vegetable. It possesses not only the elements of good nourishing food, but medicinal properties unequalled by almost any other plant. Nothing has found universal favor in so short a time. It is only a few years since it was grown only as an ornament; now you find it on every table and in every variety of form. It is good any way you may choose to eat it, and not only healthy, but health producing. Its actions upon the liver are slow but sure, and eaten freely twice a day will effect more permanent cures than all the mercurial preparations known. In glass or tin jars it is easily preserved. The trouble in Oregon is to cultivate it. This arises from the coolness of the nights during the summer. It needs warm weather and warm soil. Dig a hole one foot deep and two feet in diameter, throw in this half a bushel of fresh manure, cover

this with fine earth and plant as early as possible, and you will never fail. A dozen hills will grow all any family will need.

MAC.

THE so called Rose of Sharon is one of the most exquisite flowers in shape and hue. Its blossoms are bell shaped and of many hues and dyes. But its history is legendary and romantic in the highest degree. In the east, Syria, Judea, and Arabia, it is regarded with profoundest reverence. The leaves that encircle the round blossoms dry and close together when the season of blossoming is over, and the stalk withers completely away at last from the bush on which it grew, having dried in the shape of a ball, which is carried by the breeze to great distances. In this way it is borne over the waste and sandy deserts, until at last, touching some moist place, it clings to the soil, where it immediately takes fresh roots and springs into life again. For this reason the Orientals have adopted it as the emblem of the Resurrection.

A CALIFORNIA PRUNE ORCHARD.

According to statements in the California papers, the best prune orchard in the world is that of J. M. Patterson of San Jose, California. It contains about 2,000 trees set in rich alluvial soil, 12 feet apart, remarkably thrifty, and produces crops of very superior fruit. The *California Agriculturist* says:

Last season 600 Gros Prune d' Agin trees produced some twenty-five tons of fruit, worth at wholesale, not less than four cents per pound, or \$2,000. The fresh fruit brought, in twenty pound boxes, in New York, twenty-five cents per pound, and in San Francisco was worth, nicely packed in small boxes, from six to eight cents per pound. The

same variety of prunes, pitted and dried by the Alden process, were sold here, wholesale, to an eastern firm for thirty cents per pound, and three pounds of green would make one of dried fruit.

There were produced in the same orchard over five tons of the Petit Prune d' Agin, a small, very sweet prune, and one in demand for its excellence. These are prized as drying prunes, and will lose only one-half by evaporation. The difference in flavor between this prune and the large Gros Prune d' Agin is considerable, the small prune being sweet, while the large is quite tart for a prune. There were several tons of Damson plums and a quantity of Green Gages and other plums produced in this orchard, all of very fine quality. Every season the fruit is thinned out nearly one-half when from one-quarter to one-half grown, to keep the trees from overbearing. The advantage in this is, the trees are prevented from breaking, and what fruit is left grows to a very large and uniform size.

Mr. Patterson says there is a difference of two years in the bearing age of plum trees between the budded and grafted trees, the grafted trees bearing two years sooner than the budded ones. This is his experience. Grafted trees four years in orchard, set when one year old, bore ten pounds each. When the trees are eight to ten years old they will bear one hundred pounds to the tree on an average. Ten acres in plums and prunes, on suitable soil, are all that one family would want or need. It would bring a liberal income every year.

He is offered \$2,000 a year for the fruit his orchard contains without further expense to himself than cultivating and caring for the trees. This, on about six acres of orchard, many of the trees of which are too young to bear much.

Editorial Portfolio.

OUR FRONTISPIECE.

We present our readers this month, with a colored engraving of a good Fall Apple—the Gravenstein. The season of fruit tree planting in California is at hand; and at the risk of appearing non-progressive we would suggest here that those who are making their selections of varieties are often quite as liable to err in their search after unsuccessful novelties as in adhering too closely to standard sorts.

The name of the Gravenstein Apple is familiar to most apple eaters, and nurserymen, and fruit growers generally are acquainted with the characteristics of the fruit; but to many readers of the *HORTICULTURIST* the following description and accompanying cut will be of practical utility, while those who are best acquainted with the original will derive a degree of satisfaction from an interview with one of their favorites.

Fruit—size, large; form, roundish, flattened, a little irregular, somewhat ribbed; surface, undulating; color, at first pale, greenish yellow ground; becoming a rich yellow beautifully striped and splashed with bright red; exposed or grown mostly in the sun, the red prevails and becomes of a beautiful dark hue, with a few faint light green dots; stem, short; cavity, open, deep; calyx, with open, half reflexed segments; basin, rather deep, irregular, ribbed; flesh, yellowish, crisp, tender, subacid, with a peculiar aromatic taste; core, large; capsules, open, hollow; seeds, ovate, pyriform, reddish brown. Season—in the Atlantic States—August to October, in California it ripens at least a month earlier. Wood, brown, purplish red, very strong; leaves, large,

ovate, broad, glossy green; flowers, large.

The trees are regular, strong spreading, upright growers, succeeding so far as yet known in almost all soils; strong, rich loams producing the best fruit. It bears young and annually, and is valuable either for the kitchen, dessert or market purposes. It is a variety almost indispensable in any and all collections and orchards. Lastly, we may confidently assert that it is a superb looking German Apple, which originated at Gravenstein, in Holstein, and is thought one of the finest Apples in the north of Europe. It has fully sustained its reputation in the Eastern States of our Union, and is, unquestionably, a fruit of first rate quality. Its synonym is *Grave Slije*.

OUR warm friend and contributor, Mr. Drew, of El Dorado, Cal., sends us the following gratifying offer for the benefit of our publication. We hope many will respond, for it is just what we need to make the magazine more valuable to every one interested in flowers:

DO YOU WANT IT?

In order to induce many of the subscribers of the *California HORTICULTURIST* to write up their several experiences for publication, I will, as a slight return for such favor, send to each person who may send in an original article during October or November, a copy of "Drew's Window Garden," price, 25 cents. Articles to be directed to the editor of the *California HORTICULTURIST*.

W. C. L. DREW, El Dorado, Cal.

SOME FACTS RELATING TO THE JAPANESE PERSIMMON.

The following statements concerning this new fruit here, by Mr. H. H. Berger, who has resided in Japan for the

last two years, who was in the employment of the Japanese Government, has a considerable knowledge of the Japanese language, and had many opportunities of traveling through that interesting country, will, we think, be found of value to our readers, and especially all pomologists in California, and indeed to nearly the whole of the United States.

This fruit has since its introduction into this country attracted so much notice that there is hardly anybody interested in fruit growing but has had his attention called to it. Of the two principal varieties, the Amakaki and the Shibukaki, the former is the one of most importance for this country, as it is the sweet kind, while the Shibukaki is of almost equal importance for the Japanese, the juice of the unripe fruit, the Shibu being extensively used in the manufacture of waterproof articles made of paper, and for many other purposes. Almost all the varieties of the sweet kaki are natives of Japan, while most of the other kinds were introduced from China. The kaki grows all over Japan; the best varieties in the valleys of Shinshu and Kosshu, in the middle and northwestern part of the principal island of Nippon, between latitude 35° and 39° . Those of the south are inferior both in size and taste. About four years ago some of the better varieties were introduced by the Japanese Department of Colonization into the island of Yesso, between latitude 42° and 44° , where they are doing exceedingly well, a fact which leaves no doubt as to the hardiness of the tree considering the long and severe winters of that part of Japan. It is also said to do finely in England, while attempts to introduce it into Southern Germany have failed. Too near the sea-shore only the poor kinds will do well. Among the choice varieties the

Hakume is distinguished by its enormous size, the fruit growing to twelve inches in circumference, and the Hatsiga, which has its name from the village of Hatsiga, where it is extensively cultivated, by its fine drying qualities. The Japanese prefer to plant the tree on sloping ground of good quality, never omitting to apply well fermented liquid animal manure in spring. The trees commence to bear about two years after grafting on old roots resting generally every fourth year. A five year old tree is from 6 to 8 feet high and produces from 150 to 350 Persimmons; if too many on a tree they are thinned out. The trees of the poorer varieties grow from 40 to 60 feet high, but for the fine varieties from 20 to 25 feet is a good size; if growing higher the tops are cut off. It does not commence to spread until about 15 feet high, it being then assisted by careful pruning. The foliage being very thick the branches are tied down to pegs placed in the ground, so as to keep the boughs from intermingling and to let the sun shine through them. The fruit of the Hakume ripens in October, that of the Mino and Hatsiga a little later. It contains from 5 to 7 small seeds, if of a good variety; the less seeds the better the fruit. While it does not require frost to ripen, it is considered to improve the fruit to be touched by frost once or twice. It is not allowed to fully ripen on the tree, but is taken off a few days before maturity, because it is very liable to drop and rot on the ground if too ripe. In gathering the fruit from the tree the twigs are broken off with the fruit hanging to them, as the same twigs will not bear twice in succession. The Hatsiga and other varieties for drying are taken off when only half ripe. The drying process is rather laborious, as the fruit is pared by

hand and then two by two tied together with straws hung up on bamboo sticks in the kakiga or drying hut, from whence they have to be removed several times and changed in position until the white bloom appears on the surface. For the production of Shibu the small varieties, the Aoso Kaki and Ko Kaki are the best, as the Shibu of the larger kind is of inferior quality. A fine full grown tree of the Hakume variety will produce from 3,000 to 4,000 Persimmons.

FLORICULTURAL REPORT AT THE LATE FAIR.

To the Secretary of the Mechanics' Institute: The undersigned, appointed a committee to award the premiums offered by the managers of the Mechanics' Institute for floricultural display, respectfully report as follows:

We have examined with care and pleasure the exhibits made by the several competitors, viewing them frequently and noting all praiseworthy efforts which have been made to interest and instruct visitors at the fair. We find exhibitors generally are entitled to much praise for maintaining their stands in fine condition and introducing new supplies at intervals to keep the display in high order.

We would respectfully remark that we are sorry to notice that the suggestion made by the committee of judges at last year's fair, concerning the advantage of having all plants clearly marked, was not put in force this year. We think there can be no doubt of the great benefit which the public would derive if every plant on exhibition were plainly marked with both common and botanical name, and we hope this suggestion will be realized hereafter.

We would respectfully suggest that

the schedule of premiums, which invited competitive displays of certain special classes of plants, be restored hereafter, as such competitive displays encourage specialists to bring their favorite classes to the highest perfection.

We have awarded the premiums offered by you this year as follows:

Miller & Sievers, for the best continuous display of plants and flowers, \$100; James Hutchinson, \$75; best display of cut flowers between dates, James Hutchinson, \$30; Thomas Saywell, \$20; amateur cut flowers, E. A. Upton, \$15.

We would recommend for a special premium the fine and comprehensive exhibit of ferns, palms and other rare and beautiful foliage plants made by Woodward's Gardens. This exhibit is of high merit, but as the premiums intrusted to us for award are for "plants and flowers," we find that it does not come within the conditions.

R. J. TRUMBULL,

E. J. WICKSON,

E. J. HOOPER.

CULTIVATION OF FRUIT AND REPORT ON THE FRUIT AND VEGETABLE MARKET.

As to the condition of the market for the last month (September), about the middle of that month the supply of Apples, Plums, Peaches, Grapes, etc., was plentiful, while the market was overstocked with Canteloupes, Watermelons, Tomatoes, etc. The prices for nearly all sorts of fruits were very low, with but little profit to the producer, with the exception of those who sent to market only the very best kinds, and sending them neatly packed in nice clean handsome packages.

Dried fruits of good quality began to make their appearance, and we soon will have new crop Raisins. Apples—

25c. to \$1 per box. Pears—Bartlett, 75c. to \$1.25 per box; Cooking 30c. to 40c. per box. Plums—70c. to \$1 per box; Common, 1c. to 3c. per lb. Peaches—75 cents to \$1.50 per box. Quinces—60c. to 75c. per box. Strawberries, \$3 to \$4 per chest. Blackberries, \$4 to \$7 per chest. Figs—White, 3c. to 4c. per lb; Black, 3c. to 4c. per lb. Oranges—Tahiti, \$25 per M. Lemons—Sicily, \$16 to \$18 per box. Limes, \$10 to \$12 per box. Pineapples, \$6 to \$7 per doz. Cocoanuts, \$5 to \$6 per 100. Watermelons, \$5 to \$15 per hundred. Canteloups, \$4 to \$8 per hundred. Grapes, 40c. to \$1. Dried Fruit—Apples, 4c. to 8c. per lb.; Peaches, 8c. to 9c. per lb.; peeled, 20c. per lb.; Pears, 7c. to 10c. per lb.; Plums, pitted, 12½c. to 15c. per lb.; Blackberries, 15c. per lb.; Figs—White, 6c. to 8c. per lb.; Black, 5c. to 6c. per lb.; California Raisins, \$1 to \$2.50 per box. Prunes, 9c. to 10c. per lb.

We had the pleasure to notice in two or three places in the fruit stalls a very much better article of Plums in the Coe's Golden Drop, of *Hooker, Lindley and others*. By some it is called Coe's Imperial, Coe's Seedling, etc. Mr. Coe, a market gardener of Norfolk, England, who raised this splendid fruit, has perpetuated his name by association with it. Many varieties have been subsequently produced, but few of them have as high claims to regard as the *Golden Drop*—indeed it has been pronounced superior to any late plum cultivated in any country except the famous Green Gage. The fruit is of extra large size, especially in California, rich, and in opinion of competent judges, besides the judgment of the writer, not inferior, as we have just observed, to the celebrated Green Gage, to approach which in quality, is usually deemed high merit. Its skin is greenish yellow,

spotted on the sunny side with violet and crimson. It is very juicy and luscious in flavor. The flesh is firm, when about three quarters ripe, and adheres rather closely to the stone. The tree is of vigorous habit, and has proved well suited to the Western States and this coast. It is to be regretted that this and the Green Gage are not much cultivated on this slope. The latter seems not to be as good a bearer as the Golden Drop. Most of our other Plums are dry and flavorless in comparison with both of the above Plums.

The *Commercial Herald* states that increased attention is being given to the drying of Peaches and all other fruits, and upon an extensive scale. The latest patent dryer is that of the Mefford system, to which we made special reference some months since. We have been shown Peaches dried by this machine in four hours that seemed to be perfection itself, and is thought to be every way preferable to the Alden or other processes used here the past two or three years. It is probable that many thousand boxes of Raisins will this fall be utilized by this new drying process. Our every day market is still surfeited with at least ten thousand packages of Peaches and other kinds of seasonable fruits, the bulk of this of good quality, enabling our canners, both in the city and country, to can and pack large supplies. At the fair of the Mechanics' Institute there was a less formidable display of California Fruits, Case Goods, Pickles, etc., than usual at these annual exhibits. The reason no doubt is that our several canning factories are too busy to give it needed attention. They are, however, putting up more than an average supply of Peaches, Bartlett Pears, Jams, Jellies, etc., and which are all of the very choicest quality.

About the end of last month (September), the markets were glutted with all the varieties of fruits common to the season. The supply of Peaches, however, seemed to be decreasing rapidly, but besides the ordinary fruits, there were Blackberries, Strawberries, and a few Raspberries. All the kinds of melons were abundant. Grapes were in good supply. Tomatoes, Sweet Potatoes and other vegetables were plentiful and cheap.

The chief object of those who cultivate fruit for market is that of profit, and to secure the largest return on capital invested, requires a judicious selection of varieties. Unfortunately for all concerned, the best in quality are seldom the most profitable for general market purposes, usually the highest flavored are the most delicate that grow and generally rather or quite unproductive. Individual tastes differ—one will choose a variety that another will reject. Taste, however, is changeable, and a fruit, which at one time may be quite distasteful, will, by a constant acquaintance, become very agreeable. Our markets are but an aggregation of individuals, consequently they often change, and a particular variety of fruit, when first introduced, will find no purchasers, though it may afterward become exceedingly popular.

A particular color will often be the cause of rejection, and it will require a constant and persistent effort on the part of the producer to introduce the variety and persuade the masses to purchase. In other cities the results may be quite the reverse, which would only show that the masses must become acquainted with a variety before they will freely purchase, especially if it differs widely in appearance from those which are well known. The public taste on this coast at least, has not as yet been

sufficiently cultivated to discriminate or select the very best (witness the Green Gage and Golden Drop Plums), and it is doubtful if the masses appreciate or care whether a fruit is fully up to any particular standard of quality that scientific horticulturists have endeavored to establish; quantity is evidently more highly prized than quality, especially if the latter is attended by scarcity. We do not wish in these remarks to convey the idea that the very best should not always be sought for, but when their cultivation is not remunerative, quality alone becomes of doubtful advantage to the producer.

The more familiar people become with any particular kind of fruit the more they will appreciate it, and should any thing occur to deprive them of a supply, they will feel the loss very keenly. Small fruit culture has especially become quite a prominent feature in American horticulture, and every possible means should be employed, not only to keep up the supply, but to increase it so that it will equal the demand.

Heretofore production has been mainly local; that is, a particular neighborhood, has made a specialty of growing some or more kinds that have been found to be adapted to the location and soil.

Fruit growers in other sections, having tried the same variety or varieties, as the case may be, and not finding their culture remunerative, have discarded them. Instead of doing this, they should have tried to produce new varieties that would succeed; or endeavored to procure from among the many already known some kind that was adapted to their particular soil and location. It is well known to every experienced horticulturist that certain species, and all the varieties produced

therefrom, fail in some locations and soils, while other species and their varieties, although of the same genus, will succeed most admirably. These peculiarities of species have given rise to much discussion among fruit-growers. One will assert, for instance, that the Raspberry is a total failure in his section, and that it can not be grown, which may be true in regard to a particular kind or class, but no further. There is probably no soil in our whole country, unless it be under water or totally barren, in which some one or more kinds of fruits may not be profitably grown. The great desideratum is, to determine which they are, and the people are looking to experimenters to furnish the required information.

The plan which is now followed to raise and try seedling fruit is the following: The seeds are selected from perfect specimens of those varieties which possess the required qualities, the blossoms of which have been fertilized with the pollen of another fruit of the *same class*, a resemblance to which is desired; or they may be taken simply from fine fruit not impregnated artificially. They are planted rather thinly in good rich soil, and attended to as usual. During the summer they are more closely observed, and the most promising are marked—for instance, such as are less thorny, are moderate growers, and of somewhat stout appearance; the very thorny plants, of thin tall growth, may be rejected. In the following spring the promising seedlings are transplanted in rows like nursery rows, and every one numbered. In order to ascertain in the shortest time the quality of the fruit which those seedlings bear, their tops are cut off and used as grafts, if they are strong enough, and inserted as follows:

The apples are grafted on *bearing*

dwarf apples, that is, on other sorts of apple-trees which have been dwarfed by being themselves grafted on the parent stock. Ten to twenty grafts of different seedlings may be inserted in the top or ends of the limbs on one of those dwarfs, if it be of sufficient age and size; in this way they usually show their fruit about the third year, which makes a gain in time of at least ten years.

As one of those dwarf apple-trees requires only six feet square of land, so 1,000 may well stand on an acre, and 10,000 seedlings may be tried at one time on one acre in less time than four years. Every graft should be numbered with the same number as the seedling from which it was taken, in order to know where to get a supply of grafts if the fruit should prove valuable. Those grafts which prove worthless may be cut off or used to try others on their tops.

Should any of the grafts grow with too much vigor, and refuse to bear, it may be forced to do so by girdling the limb on which it is inserted. Strong growing seedlings with large leaves and thick wood generally prove to be summer or fall apples.

In the absence of dwarf trees of a proper age and size, the same course may be followed with bearing standard trees, but less conveniently than with dwarfs.

Pear seedlings are tried on pears dwarfed on the quince and treated in the same way, only the pears require more space; about ten feet square will do for them. Native plum seedlings may be tried on bearing plum-trees of the red or yellow wild plum resembling the Chickasaw, or on others if these can not be had.

In Europe there is no tree or shrub bearing anything like an eatable fruit,

which has not its variety, even the hazelnut, the acerb, acid sloe plum; the sorbus, the rose and medlar have their representatives in the orchard; and still America in its temperate zone, is richer in native fruits, for one grape of Asia we have five (or indeed many according to some botanists); we have one Apple, *Pyrus coronaria*; several Plums, *Prunus nigra*, *Chickasaw*, etc., two Walnuts, *Juglans nigra et cinerea*, three Hickories, *Carya oliviformis*, *Alba*, *Porcina*; two Chestnuts, *Castanea*, *Americana et chincapin*; one Hazelnut, *Corylus rostrata*; three Black Currants distinct from *Ribes nigrum*; one Gooseberry, *Ribes triflorum*; one Persimmon, *Diospyros virginiana*; two Raspberries, *Rubus idæus*, *Americana*; one Mulberry, *Morus vibra*, with many other less important fruits, every one of which could be made the type of a whole class of new fruits, besides what are adapted to our climates of the exotic sorts.

We do not pretend to say the American pomologists have done less in this line than the Europeans, but they have the results of thousands of years in their possession; the object is only to show what materials we have on hand, what might be done with them, and how to attain this design in the shortest time and with the least trouble.

Editorial Cleanings.

GRAPE GROWING IN SAN JOAQUIN COUNTY.—It has been long maintained by the most prominent vine-culturists in this county that much of the soil in the vicinity of Stockton is better adapted to grape-growing than the soil of any other part of the State, both for grapes that are grown for table use and for wine making. The shipment of grapes from Stockton this year fully demonstrates the correctness of that theory.

George West is shipping daily on an average 200 boxes of grapes to the San Francisco market, receiving from 75 to 85 cents per box, according to variety. These grapes are pronounced by the dealers in San Francisco to be greatly superior to those received from any other locality, and in proof of this opinion they pay from 20 to 25 per cent. higher for them than they do for grapes from any other locality. The soil in the vicinity of Stockton is peculiarly adapted for grapes, and particularly for grapes that are to be used in the manufacture of some of the wines, as the sherries. The grapes contain more saccharine matter, and while they are said to be better for sherry wines, they are not claimed to be better for claret. The wine-growing interests of this county are capable of a great development. They are yet in their incipency, but as the resources and capabilities of this section become more fully known and acknowledged, hundreds of acres will be planted to the grape where now there are not tens.—*Stockton Herald*.

THE EUCALYPTUS TREE.—A Rome correspondent of the *Philadelphia Press* gives an interesting account of the sanitary virtues of the Eucalyptus tree. He says that the supposed place of the execution of St. Paul, some two miles outside the walls of Rome, and on which there has long been a monastery, was one of the most pestiferous spots in that malaria-affected atmosphere. Such was the mortality among the monks that for more than fifty years no one lived in the monastery. Now, by the careful management of some Trappists, a grove of the poison absorbing Eucalyptus tree has been raised to a great height, and for the last three years the monks have been able to live there with perfect impunity, and it is now as

healthy as the Quirinal itself—the most salubrious section of the city.

THE phylloxera has made its appearance in the Cognac vinicultural region of France and at other points north and south. In Burgundy it has appeared among the vineyards of the Haut Bourgogne, at Mersault, so celebrated for its white wines. The insects have even dared to venture into the experimental garden at Dijon, thus braving science in its capital. In the Herault the phylloxera continues to spread, regardless of all opposition. In the Department of Vienne the insect has made its appearance at a point which is not connected with any other infected district. Grave apprehensions are entertained that the wine crop of France will be seriously reduced during this and succeeding years. The only preventive against the ravages of the phylloxera hitherto discovered is to graft native vine shoots on American stocks.

Flower pots that are dirty, upon being emptied, should be carefully washed, and, if scalded, so much the better. A dirty pot will often give rise to fungus growths, and thus by washing much difficulty may be obviated.

FRUIT TREES WITH LOW TOPS.—There can be no advantage in having a tree-top twenty feet high, with the extremities of long, slender branches. As a rule, fruit trees should be low-headed—so low that when the fruit begins to bear the branches will reach the ground. Dwarf trees, in particular, should be trained with low heads. It gives us great pleasure to see that this matter is already understood in the West. The late-planted orchards and the nurseries, too, afford evidence of this, so that we can find but one opinion among the more intelligent cultivators. For the

pear and cherry, this is still more essential than for the apple, because these trees are more delicate in general, and injuries are more fatal to them. For both these trees we prefer the conical form, whether on dwarfs or free stocks, not because the trees in that form are beautiful, but because the trunks and large branches can be more effectually protected. The trees of finer pears are all easily injured by freezing and thawing in the bark, which is smooth and thin; but if the trunks are well feathered with branches to the ground, they will seldom be injured. It should always be borne in mind that the trunk of the tree is the main channel of circulation. When it is injured, circulation will be impeded and irregular, and a general debility will quickly follow. Some people argue that this training of the trees as low standards and pyramids is both expensive and unnatural. The low standard requires no more pruning after the tree is planted than the high one, and it is just as natural, and more so, for the tree to branch at three feet from the ground than at eight feet. The conical form does require some pruning at first to fix the habit that is to secure a preponderance of vigor and size for the lower branches. When this is done it becomes natural, as most pear and cherry trees, if left to themselves in abundant space, will assume the conical form voluntarily.—*Woodland Democrat*.

HOW PLANTS PROVIDE FOR THE FUTURE.—Each species of plants must, of course, solve for itself the problem, during the course of its development, whether its energies will be best employed by hoarding nutriment for its own future use in bulbs and tubers, or by producing richly-endowed seeds which will give its offsprings a better chance of

rooting themselves comfortably, and so reviving in safety amid the ceaseless competition of rival species. The various cereals, such as wheat, barley, rye, and oats, have found it most convenient to grow afresh with each season, and to supply their embryos with an abundant store of food for their sustenance during the infant stage of plant-life. Their example has been followed by peas and other pulses, by the wide class of nuts, and by the majority of garden-fruits. On the other hand, the onion and tiger-lily store nutriment for themselves in the under ground stem, surrounded by a mass of overlapping or closely-wound leaves, which we call a bulb; the iris and the crocus lay by their stock of food in a woody or fleshy stalk; the potato makes a rich deposit of starch in its subterraneous branches or tubers; the turnip, carrot, radish, and beet, use their roots as the store-house for their hoarded food-stuffs, while the orchis produces each year a new tubercle by the side of its existing root, and this second tubercle becomes in turn the parent of the next year's flowering stem. Perhaps, however, the common colchicum or meadow-saffron affords the most instructive instance of all; for during the summer it sends up green leaves alone, which devote their entire time to the accumulation of food-stuffs in a corm at their side; and, when the autumn comes round this corm produces, not leaves, but a naked flower-stalk, which pushes its way through the moist earth, and stands solitary before the October winds, depending wholly upon the stool of nutriment laid up for it in the corm.—*Popular Science Monthly*.

SIMPLE DIRECTION FOR PRESERVING FRUIT.—Glass and stone jars are the only kinds to use (for the acid of fruits

will not be healthful if preserved in tin), and they can be purchased very cheaply. Nearly all fruits retain their flavor better if they are steamed instead of stewed, as they are not so much broken up. To four pounds of fruit take one pound of lump sugar, as it is less subject to adulteration. Fill the jar within two inches of the top with the fruit; melt the sugar in very little water, and turn it boiling hot upon the fruit; place the jars in a pan of boiling water, and let them steam about ten minutes, or until the fruit, by the explosion of the cold air, has been forced to the top of the jar; put the cover on at once, with a cloth, so as not to burn your hands, and screw it down tightly while in the boiling water; set the jars on the table to cool, and if any bubbles appear in them take off the cover and boil again until the fruit is again forced upwards. Fruit canned in this manner will keep for years and retain its flavor perfectly. Tomatoes can be preserved in stone jars with great success. Stew them for two hours in the jars, in the oven or in pans of boiling water, filling them up as the juice evaporates; then cover with cotton cloth, and put in the large corks that come with them, so as to prevent the hot air from escaping. Make a sealing wax of one pound of rosin, two ounces of beeswax and two ounces of mutton tallow, all melted together. Put it on while hot, with a brush, covering the cork and the sides of the jar completely. Keep in a dry, cool cellar.—*Rural World*.

NUTRITION IN FRUIT.—R. F. Kedzie of Lansing, Mich., furnishes some facts and deductions from analysis, showing the relative nutritive value of fruit as compared with other foods. Taking the average of the more common large and small fruits, they contain from four-

fifths to nine-tenths water. They do not rank high for repairing and building up the human body. An egg, weighing a little over an ounce and a half, and containing 77 grains of albuminous matter, is equivalent in nutritive value to 17 ounces of heart cherries, 22 ounces of grapes, 30 ounces of strawberries, 40 ounces of apples, and 4 pounds of pears. Heart cherries contain only three-fourths water, and have nearly double the nutritive value of strawberries, which have more than nine-tenths water. These, we may remark, are the result of analysis; but in actual use, the case may be different, as some foods are more readily assimilated than others, and those which contain little nutriment in themselves may strongly promote the digestion of other substances. In one respect, fruit possesses a power of preventing disease, when regularly eaten, which gives it great value. Residents of newly settled portions of the country, when they can have a regular supply of well-ripened fruit, are rarely attacked with the malarial diseases which so often prevail in those regions.

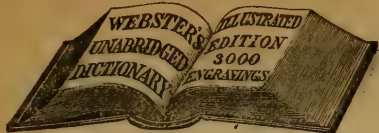
WILD WALNUTS.—The Fresno *Expositor* says: T. M. Lewis, an old and experienced mountaineer, while chasing a bear in the vicinity of White Deer, on the south side of King's River, discovered a clump of trees so different to those common to our mountain country that his attention was particularly drawn to it. On reaching a small opening at the confluence of two creeks he discovered a beautiful grove of the trees. He made an examination of the trees and found under them a number of nuts. Upon showing them to some of his friends they pronounced them to be black walnuts. These and his description of the trees renders it certain that

he has discovered a walnut grove. This is the first instance that we know of where wild walnut trees have been discovered in the Sierra.

A SPLENDID NURSERY.—Messrs. Ellwanger & Barry, whose advertisement appears in another column, have a great reputation throughout the country for their large assortment of the choicest selections of trees, plants, or bulbs. Without exception, their establishment at Rochester, N. Y., is the largest and most reliable in the United States. Parties desiring to lay out their grounds, should send for a collection of their Catalogues, and select what they wish. They are full of descriptive cuts, and are an ornament, as well as very instructive.—*Spirit of the Times*.

WOMAN GARDENERS.—A Genevan correspondent says: "A new species of instruction for women has recently been in great favor in Switzerland, more especially in the great orchard districts of the Thurgau, Berne, and elsewhere. A scientific gardener gives practical lectures on the cultivation of fruits and vegetables, and an experimental field is granted for practice. Such a course was instituted some time since in the busy town of Burgdorf, where Pestalozzi began his great educational revolution eighty years ago. No fewer than one hundred women and girls have already given in their names as students. The general crash of manufacturing industry is filling the air with speculations and proposals for the fuller use of the land as a means of livelihood."

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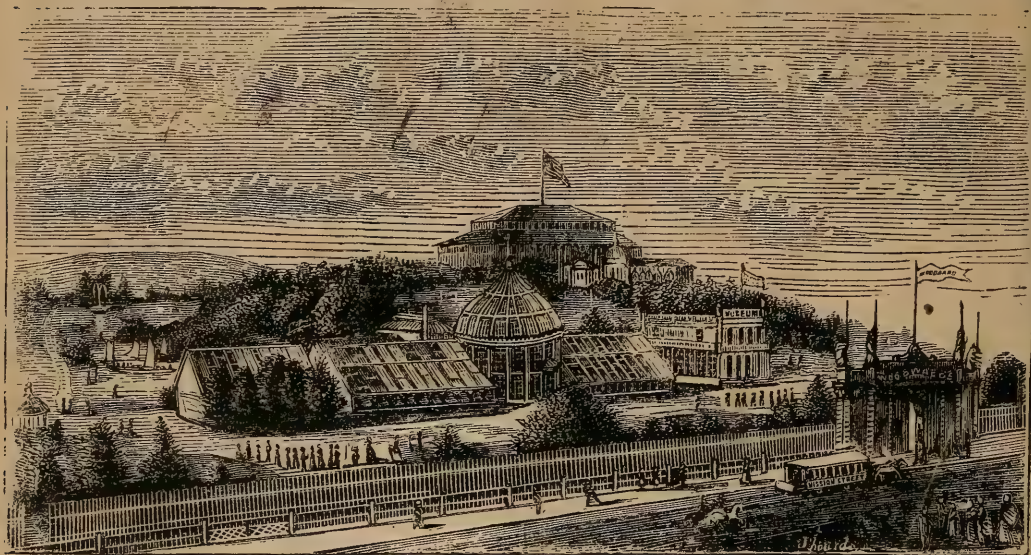
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THE

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KEEPING DAHLIAS.

BY W. C. L. DREW.

As this is the season when the digging and storing of Dahlia tubers is in order, a few remarks will not be inappropriate. As all florists know the Dahlia is very sensitive to either cold or heat, and is the most difficult to keep of all the summer flowering bulbs. It has large fasciculated, tuberous roots, which, in order to properly perpetuate the stock, must be preserved whole through the winter, and not parted until in the spring, after the sprouts have pushed out around the stem.

They germinate only around the stem, and it is just as necessary to preserve the stem, or a portion of it, as the tubers. As a rule, Dahlia roots are impaired more by heat and dryness than by cold and moisture, although the two latter are so injurious to a healthy preservation of the tubers. Most of the new varieties are harder to keep than the old-fashioned kinds, and consequently require more careful treatment. Dahlias should be lifted before the ground becomes frozen, the tops having previously been cut off to within two or three inches of the ground.

Care should be taken not to bruise or mutilate the roots in lifting, as it makes them more liable to decay. Transfer them to a rather cool frost proof cellar, before they wilt, and store away upon a shelf near the ceiling or sleepers. A temporary shelf may be suspended from the ceiling for the purpose. Dahlias stored in this way may be preserved as sound and fine as the day they were stored.

There are, however, a great many different methods of keeping Dahlias practiced, and indeed almost every person has his or her own way or method, all of which are more or less successful, yet we know of none as simple and entirely satisfactory as the plan outlined above.

Some dry them and pack them in sand or sawdust in kegs or boxes, and keep them in the sitting room or cellar; others pack them in sand in crocks or jars, and cover well, so as to exclude all rain or moisture, and bury them in a well drained spot in the garden. Another class wrap them in cloths, and keep them in boxes in the house; while others remove them from the garden to the cellar without disturbing the earth around them more than can be avoided.

As we said, all these ways are more or less practicable and successful; but above all, we would advise the amateur not to dry the roots so as to make them wither or wilt. Store them in a place where they will neither mould nor decay, and where they will enjoy the benefit of air, bearing in mind that light is injurious, and that they will be more liable to be impaired by dry rot than by any other evil to which the roots are subject.

CHARACTER OF JAPANESE GARDENS.

BY H. H. BERGER.

There is hardly a people in the world who appreciate the beautiful and charming in nature so much as the Japanese. They love flowers, plants, fine scenery, etc., and it is therefore not surprising that they have brought the art of gardening to a high perfection. Descriptions of their gardens are contained in nearly every book on Japan, and from these it is generally known that their style and taste differ in many respects from ours. This style although not originally Japanese, but introduced from Corea during the reign of the Empress Suiko, about 1400 years ago, has in the course of time been considerably magnified and is now in perfect harmony with the mild and gentle character of the people. The Japanese do not delight in stiff gardens on a level piece of ground with a cover of turf cut up by walks and gay with flowers, but their gardens are perfect landscapes copied of fine sceneries in which the country is so rich, with all the details, as hills, lakes, rivulets, bridges, roads, trees, etc., in them, all proportionately reduced in size according to the space in which they have to find room. Thus the same landscape may be reproduced in a porcelain basin or

occupy a large piece of ground outside the house, only the size of the different objects in it being changed. Nothing looks ridiculous or out of proportion in such productions, everything is equally diminutive in size, like a real landscape viewed through the wrong end of a telescope. But one must not suppose that in laying out their work the gardeners can act arbitrarily and arrange the various objects as their individual taste would dictate them; they are not merely to produce a pretty landscape on a small scale, but their aim must be to awaken through their productions certain sentiments in the mind of the beholder. Nature makes impressions and calls forth sentiments the same as music, and the knowledge of this with long and close observation has given them certain rules which they follow to produce a desired effect. Thus a perfect Japanese garden is a harmonious whole with nothing superfluous and nothing to add. It is like a fine piece of music rounded off and finished. With us a fine plant or tree is always acceptable, and we will manage to find a place for it in our garden; but not so there, as the gardener has to consider first whether the addition of some new object will not destroy in some degree the expression of his work, or whether it will increase its effect. From this it is now easy to understand why flowers are not much used for such gardens, however fond the people may be of them. Their Shobus (Iris), Yuri (Lilies), Camellias, Sakura, etc., are too short-lived for that purpose. If they were used it would not be so much on account of their own beauty as to add or produce the desired effect, to soften some harsh feature, etc., and as to fading away, the expression, which is desired to be permanent, would be gone. Evergreen plants and trees are much

preferred to them. There is scarcely a house without a garden in Japan, but of course not all are laid out with such strict and careful observance of all the rules of the art; only rich people can afford to have such; however, the principles of harmony are everywhere observed as much as possible. The Japanese gardeners are not only skillful in producing miniature landscapes, but also in laying out parks and gardens on a large scale. The imperial gardens and others are very fine, containing beautiful trees, ponds, waterfalls, rivulets and islands, all arranged in a manner to deceive the eye and to produce an exaggerated idea of the dimensions of the grounds.

It has already been said that the gardeners understand how to give their landscapes different characters, according to the purpose they are to serve. Their family gardens are generally very lovely productions; charming, smiling landscapes in front of the room where visitors are received, calculated to please and awaken serene thoughts. Such a garden in full view when the members of the family and the guests are assembled, engaged in cheerful conversation with the *sake* cup passing around, listening to the song of the Gei-sha (singing-girl) or her play on the samisen, or admiring the graceful snake-like movements of the dancing girl, must surely add to the joyful spirit of the party. On the other hand, the garden in front of the room, if there is any such in the house, which, removed from the noise of street and household, is devoted to quiet reflection or to conversation with a few intimate friends, has quite another rather serious expression. One must have witnessed one of their flower festivals to realize how much the Japanese enjoy not only their gardens and flowers, but the beauty of na-

ture in general. When the Chrysanthemum is in bloom, or valleys and surrounding hills are ablaze with the double flowering Sakura or Momonoki (cherry and peach tree), old and young, men, women, and gayly dressed girls and children leave their homes to admire the beautiful flowers and sweet scenery and pass the day in innocent games, laughter, and merriment, with all the world like a fair garden around them. There are no fights, no quarrelling or high words. Rowdies or bad characters to disturb the general good feeling are unknown. Everybody is happy, and you go away with the impression that people who can amuse themselves in such a manner, and derive so much real pleasure from such a source, are rather to be envied than to be pitied for being behind us in many other respects.

PUMALO OR JAVA ORANGE.

BY R. J. TRUMBULL.

Citrus Decumana belongs to the order *aurantiaceæ*. The Orange, the Lemon, the Lime, the Shaddock, the Pempelmoose, and the Forbidden Fruit or Apple of Adam, are the most remarkable species of this order. The tree of the Shaddock attains a medium height and is decidedly ornamental. Leaves are entire, smooth, ovate, and of a beautiful glossy, dark green color. Young uncultivated trees are very thorny, but older cultivated trees lose their thorns entirely. Its flowers grow in clusters, but larger and more fragrant than ordinary orange blossoms. The tree is an early and prodigious bearer, and on the same branch of a thrifty tree, flowers and ripe fruit will be usually found. The fruit is remarkable for its size. A thick rind surrounds the pulp, which is either red or white, and it is one of the most

esteemed of all tropical or rather subtropical fruits. Originally it was native to Japan and China, but now it is widely scattered and cultivated. Both of these countries still produce varieties of this fruit which are superior. The Chinese variety, or that now more largely cultivated by them, produces a fruit five inches in diameter, yellow outside with a very sweet pulp, and called by them "Sweet-ball." I have never seen the Japanese variety, but a writer describes it "as being the size of a child's head," and says "that it may be kept many weeks on ship-board, if hung up; that its juice is of a sub-acid sweetness, and excellent for quenching thirst." Both of these varieties are worthy of cultivation, and should receive the attention of our orange growers. I have been informed that the Pumalo Orange now fruiting in this State is the product of a tree introduced here from Java. From all the specimens which I have seen and tasted it is evident that this variety is very inferior, reflecting no credit on Java, or, our climate being adapted to its growth, it has not thus far received proper cultivation. I am inclined to the opinion that whether our Pumalo Orange came from Java or not, it is an inferior variety, perhaps a seedling, and that neither care, nor soil, nor climate will improve it much, if any. Last year I imported a number of Pumalo Orange trees from Australia hoping they would prove superior. As they have not yet fruited I can not tell the result of my venture. It is an established fact that this orange deteriorates when grown from seed, and if we are to have valuable fruit we must procure the very best foreign trees, and having proved them, propagate from their buds.

The method of culture of the Pumalo Orange in no way differs from the other members of this family. It appears to

be quite as hardy as any of them, has a vigorous growth, and when full grown, makes a tree of a branching habit about thirty feet high. A light warm, moderately rich, well-drained soil is the best adapted to its growth. Elevated, warm locations in this State, I take it, will be found much better suited to orange culture than low, level and naturally moist lands. There is no reason why good oranges and lemons may not be grown anywhere from Red Bluff to San Diego within an average distance of twenty miles from the coast. But to do this, planters should exercise some judgment in selecting locations, just as they would if contemplating the planting of an orchard of temperate fruit trees. More attention, I believe, should be paid to the quality of soil and its tendency to free itself from surplus moisture than to temperature, for the orange will withstand, generally, all the frost we are likely to have within the above named boundaries, provided the trees are not planted in a wet, cold, adhesive soil.

THE FLOWER GARDEN AND LAWN IN NOVEMBER.

In these Indian summer days, before our heavier rains drift up, on the lagging southern winds, it is time for us to enter our gardens in the true house cleaning spirit. The beauty of many of our choicest beds is now a half-forgotten dream. The masses of tropical plants, touched by the earlier frosts, droop with blighted leaves. Seed pods and withered flowers lie at our feet. It is that season of rest, decay and melancholy warning so profoundly felt by Whittier, Bryant and all the poets of nature.

Still with us this season is too evanescent to impress us deeply. Our year's

only rest comes as a breath—a momentary pause before the first rains, with which, and almost instantaneously, the whole startled earth throbs into new life, and thereafter sleeps no more till another November. Here, then, we have not, as in the Atlantic States, a rest of many months, and for this reason we must fully utilize our short period. Plants which need trimming should be cut back now, while the buds are dormant, and before the sap has begun to flow. This applies to shrubs, evergreens, and overgrown perennials.

Herbaceous perennials, such as *Phlox Decussata* and *P. Subulata*, *Astilbe Japonica*, *Iris*, *Lychnis*, *Aquilegia* and others, may now be taken up and divided with greater safety than in spring. Clove pinks, garden pinks, carnations and picotees may now be layered, with a fair chance of success, by pegging down the branches, first notching them, to facilitate the growth of new roots.

Dahlias ought to be labeled, if this has not been already done, and, as soon as the leaves fall, dug and put in a dry place, in boxes of sand. Examine lily clumps carefully, to see if they are not too near the surface. Deep planting is the rule for lilies. Our native species—*L. Humboldtii* and *Washingtonium*—often grow a foot from the surface, and the Japan lilies, *Auratum*, *Speciosum*, *Brownii*, etc., need at least six inches of covering. The best way to reset a lily is to dig under it and let the whole clump lower with as little disturbance as possible.

Petunias, *Scabiosa*, *Antirrhinums*, and *Geraniums* of every description, if not needed for their flowers, may now be cut back, nearly to the ground, so as to form a new growth for spring blooming. A few *Fuchsias* and *Heliotropes* cut back now, will keep up a succession.

Cuttings of these plants, if more are needed, will grow most readily in a moist box of sand, from which they can be potted off when the roots are an inch long.

After the plants have all been nicely trimmed the beds need a shallow digging and a light coat of well-rotted manure before the rains. If you have reason to expect self-sown seedlings of any flowers, it is well to leave a small place near the plant undug, only raking it lightly and sifting a little sand on the surface. Nearly all the well known hardy and half hardy annuals will perpetuate themselves if we leave a little space undisturbed. We know of at least one garden where *Lobelias*, *Amaranthus*, *Nasturtiums*, *Canterbury Bells*, *China Pinks* and countless old-fashioned flowers prevail as weeds, and regularly appear in corners and pathways, from whence the tender-hearted owner hates to banish them.

During this month the boxes of bulbs, which were dug and set away in September, need to be examined. *Oxalises*, *Anemones* and *Crocuses* will in all probability be found sprouting, and need planting at once, in small beds, and closely. *Jonquils*, *Narcissi*, and yellow *Daffodils* are also nearly ready for planting. They bloom better to be covered with three or four inches of soil. Before very long the *Tuberoses* will die down, and must then be taken up, and kept till April, in a warm and dry place, where the thermometer never falls below 50 degrees Fahrenheit. This is the secret of keeping blooming bulbs; a lower temperature injures the flower-germ.

One rule never to be forgotten in November is that plants require but little water, and in most cases none at all. Delicate and semi-tropical plants need well-ripened wood to pass through the

winter in safety. This is particularly true of oranges and lemons in frosty locations. Judgment in preparing an orange tree for the winter will often save it in places where an irrigated tree would be killed. It is a good plan also to cover a few tomato vines, and keep them growing until spring.

If you have been troubled with slugs on your roses, carnations or other plants, now is the time to wage offensive and pitiless war. Slugs are very nearly the chiefest of a gardener's enemies, and no cheap and practical remedy is known except the use of new, unslaked lime sprinkled on the ground at night. This, coming in contact with their bodies, kills the slimy creatures.

The lawn, if it has had proper care throughout the summer, will not need much attention. A little fresh grass seed ought to be sown on the naked spots, and a good coating of clean, rotted manure, free from straw or weed seeds, may be spread over the entire surface, raked evenly, and left for the coming rains to render available. If, as is quite common, beds of roses and other shrubs, or of showy annuals, have been cut in the lawn, they need to be manured, rounded up, and brought again to their pristine shapeliness. If there is not already a bed of hybrid Chrysanthemums on the lawn, arrange for one there the very next year, for they bloom gorgeously at an otherwise colorless time.—*Bulletin.*

LOOK AHEAD.

BY W. C. L. DREW.

The winter is a good time to make plans for the spring and summer work. You can then form ideas of how you would like your flowers and beds arranged; where trellises, hedges, or ar-

bors should be, and what new flowers you wish to plant. A number of new flowers should always be tried, and it is well to order seeds in time so that no delays may be experienced in obtaining them when you need them.

Do not take more in hand than you can readily accomplish. Let your motto be, "Whatever is worth doing at all is worth doing well." A few well tended plants will afford far more pleasure than a host of straggling, unhealthy ones. During the long rainy days overhaul the hotbed sashes, glaze and paint them; it will save time when it is precious.

SEEDS AND SEED PLANTING.

BY CHAS. H. SHINN, NILES, CAL.

Tree and shrub seeds are most conveniently sown in boxes two or three feet square and four inches deep. The soil needs only to be rapidly mixed and pulverized with a shovel, thrown into the boxes, pressed, so that no settling will occur, and sown broadcast, the seed being covered with finer soil. The seeds of all conifers, such as Juniper, Cypress, and Fir, sprout slowly, and require moisture, light covering, and a cool atmosphere to make them grow. Our best plan is to use a covering of laths, and sow the seed early, about the first of December, covering them with fine sand. When the young plants are just coming through the ground, affairs begin to approach a critical and troublesome period. Many people manage to learn the secret of sowing seed, but comparatively few understand the care of young seedlings during the dangerous portion of their existence, from the time they sprout to the appearance of the second leaves. If you sow too thick they come up in bunches, and lift the soil, thus expos-

ing the roots. Hardy plants survive this evil, with a little thinning out, but tender plants require a little sprinkling of sand to fill the crevices. Sand is also good, if the soil gets too wet and covered with green moss, to dry the surface. If the plants get too much heat they wither; if too much damp they decay, and suddenly perish; if too much shaded or crowded they spindle, or become, as gardeners express it, "drawn," that is, they increase in height without a corresponding strength, the cellular tissue being merely lengthened without additional width. Light, warmth, and moisture are watch-words for most plants at this period. Avoid all extremes; do not let the surface get so dry that it crumbles to dust, or so wet that green scum forms on the top. Conifers need shelter from the direct sun, but tropical seedlings may be placed in the warmest place obtainable.

Seedlings of all kinds ought to stay in the seed boxes until the second leaves appear, and it is usually best to leave them until the third or fourth pair of leaves are seen, and the stem has become somewhat hard. Plants that flower the first season ought then to be spaced in other boxes, giving them rather more room than they had before. Tree and shrub seedlings may with safety be left in the seed boxes for the first year, and then planted in rows in the open ground. The various Palms and *Draconas* must be potted off early, or the roots grow so that they can not be handled. Blue Gums, *Eucalyptus globulus*, sown in August, and spaced once, are fit for planting in spring. The garden flowers, such as Carnations, Asters, Balsams, Petunias, etc., will become stocky, and gifted with fibrous roots, after one or two transplantings. They can then be put in the garden, in

masses, little groups, or as single specimens, as preferred. For handling small plants, use a knife blade, or a trowel not larger than a teaspoon; for moving larger plants, and for garden work generally, a seven-inch, steel blade garden trowel will be needed.

Seeds, although carefully planted and watched, are subject to various living enemies, first among which may be mentioned mice; they are excessively fond of some kinds of seeds, notably the Blue Gum, and will find exposed boxes, scratch up the surface, and take out every seed, leaving little hulls, in bitter mockery. Pine seed is another mouse delicacy. A greenhouse should be made safe against mice, and if one sneaks in occasionally, he can be circumvented. Where seed boxes are, however set on a porch, or in a shady place out-doors, the mice often commit depredations. The boxes can be covered with glass, or surrounded by strips of tin, and poison can be used with good effect.

The small red and black ants are also among the enemies of horticulture in general, and of seed sprouting in particular. We fervently advise every novice in the ancient art of gardening to study the ways of these restless and impudent rascals. If the flavor of any kind of seed suits their fastidious palates, they will form in sedate military lines, and carry off every seed in the box before you really discover the trick. I believe that ants are responsible for at least a few of the failures usually attributed to poor seed. If the seed they fancy are too large for one to shoulder, a number will unite, or else they will dig into it and carry off the kernel piece-meal. I have watched several minute red ants thus dissecting a Canna seed and displaying as much zeal as if they were scientific men trying to discover the secret of life. Now and

then they stop to consult, or to announce progress, thrusting their antennæ close together, then, with renewed energy pushing the work of excavation, till all the kernel was removed. Against ants, therefore, we must declare war of the relentless order. To save the boxes attacked, mark with chalk or tar on the edge of the box, trace the marauders to their nests, and drown them out with water. Move your boxes and pots occasionally, and if they have started fresh colonies make matters unpleasant for them. It is not cruel, because it is better for them to move out-doors, and study nature. Besides—and here is the gist of the matter—we want the flowers.

The greatest danger which threatens seeds planted out-doors, and also small plants, especially conifers, arises from the presence of so many small birds through the winter in our mild climate. *Salpiglossis*, *Nemophila*, Ten-week Stock, *Lobelia*, and many other flowers, will be eaten off as soon as they appear. Vegetables often suffer. Pines and Cypress, while small and tender, will be completely destroyed. If it were otherwise, field culture would be the cheapest way of growing our hardy evergreens, but the little birds snap them off as soon as they appear, and skip on the bushes saucily when the excited owner comes along, to astonish him with a flood of twitters, and a multitude of vibrant, melodious calls that half atone for the injury. The only effectual method of saving the plants is to cover them with lath frames until they are a couple of inches in height.

THE *Contra Costa Gazette* says: A. E. Austin has a watermelon vine in his garden from which he has already gathered three crops of fruit this season, and it has started a fourth. The

vine is green and thrifty, and if frost did not interfere would probably mature the infant melons.

CEANOTHUS.

BY W. C. L. DREW, EL DORADO, CAL.

Of the many species of flowering shrubs which decorate the hills and valleys of California, few, if any, strike the beholder as more worthy of cultivation than the several *Ceanothus*. Of this species of shrubs, belonging to the natural order *Rhamnaceæ*, we have some nineteen varieties in California. By far the handsomest variety is *C. thyrsiflorus*, or the California Lilac, discovered and named by the Russian botanist Eschscholtz. This is a strong grower, forming handsome, well-branched plants, five to eight feet high. The flowers are produced in dense compound racemes about five inches long. They are of a bright ultramarine blue and have a pleasant odor; they are produced in abundance in May and June. *C. cordulatus*, well known in California as Snowbush, is a beautiful companion for the first named variety; the flowers are produced in dense panicles of a pure snow white color. In habit and growth it resembles *C. thyrsiflorus*. *C. integerrimus*, is a fine variety with racemes of pure white flowers. It grows from three to five feet high, forming strong well-branched plants; this variety, while not as handsome as the other two, is well worthy of a place in any collection.

C. dentatus is a fine variety of a lower growth than the former; the flowers are produced in racemes of a dark blue color, and in such abundance that the plant is literally covered with blossoms, and forms an object when in bloom that the beholder will long remember.

C. divaricatus is known as the white flowering California Lilac; the flowers are produced in long racemes, often six inches long, of a pure white color. It grows from five to eight feet high, and forms dense well-branched plants.

C. oliganthus is a fine variety, which is unknown except around Santa Barbara. The flowers are produced in racemes about three inches long; in color they are bright blue. Not as free flowering as the other varieties.

C. velutinus or Douglass Ceanothus grows about three feet high; it produces pure white flowers in loose racemes; a very free flowering variety. I am of the opinion that this variety will be harder than the others in the Eastern States. *C. azureus* is a very pretty variety, the flowers produced in racemes two inches long, of a rich blue color.

C. spinosus is the highest grower of all the varieties, often twenty feet high. The flowers are very fragrant, of a dense deep blue, produced in numerous racemes. Wherever a tall shrub can be used, none will give more satisfaction than this variety of Ceanothus.

The other varieties are equally desirable.

THE VEGETABLE WAX.

(RHUS SUCCEDANEA.)

The most important article for illuminating purposes in Japan is the candle made from the fruit of the *Rhus Succedanea*, a tree about the size and appearance of the common Sumac of this country. It is grown more or less extensively almost every where in Japan, and especially in the western provinces, from the south, northwest to the 35th degree. Specimens of this tree have been imported for introduction.

The tree has a quick growth, and attains the diameter of a foot and a

half, and a height of 25 feet. They begin to yield berries the third year, but in California may bear the next year after planting. The berry here is the size of a small pea, of a white color, hanging in clusters, and contains the wax, as a thick white coating of the seed. The full grown tree averages 50 pounds of seed annually, about one-half of which is wax. It is a hardy plant, growing on indifferent soil, on embankments, and out of the way places.

The wax is obtained by the berries being crushed, steamed, and then placed in hemp bags and pressed in a wedge press. It is also obtained by boiling the bruised seeds and skimming the wax from the top. The wax is a palmitine or glyceride; when first extracted it is of a yellowish white color, and somewhat softer than beeswax. It melts at 127°, and when formed into candles gives a fine clear light. In ordinary candle making the unbleached wax is used. When washed and bleached in the sun and air, it assumes a pure white color.

The vegetable wax of commerce is the imported article from Japan. From experiments made it can be readily grown in this country. The tree is highly ornamental, as well as for its useful production. The wax is in great demand, and commands a good price. It is valuable for candles, making the gloss for linen, for waxing thread, and other purposes for which the ordinary wax is used. Since it may be grown so readily, its cultivation could undoubtedly be made a source of profit, and especially since the present process of extracting honey from wax will tend to lessen the supply of the ordinary article, and also leave ample room for this new industry.

HENRY LOOMIS, San Francisco, Cal.

HARDINESS OF JAPANESE PERSIMMON.

EDITOR HORTICULTURIST:—The following letter is from the Rev. John Ing, of Salt Springs, Mo., who lived for over three years in the interior of Japan. It is of much value on account of the testimony it gives as to the hardiness of the *Diospyros Kaki*. It would seem from this that it is adapted to the same variety of soil and climate as the *Diospyros Virginiana* or wild persimmon of the Eastern States:

Dear Mr. Loomis:—I am glad you are engaged in introducing the Japanese Persimmon into our country, for in so doing you are doing a great service. In my residence over three years in Japan, I saw much of this excellent fruit, and am therefore prepared to add my testimony to the great worth and superiority of the same. I have eaten the Persimmon both fresh and dried, and I *know of nothing equal to it*. I very much prefer it to the best Smyrna Figs that I have ever met with. I have seen in Japan, Lat. 40°, where the snow falls to the depth of four to five feet every winter, and remains on the ground from the 20th of December to the middle of April, Persimmons grown ten inches in circumference. The fruit, both fresh and dried, is in universal request among the Japanese, and will be with us when once its virtues are known.

HENRY LOOMIS.

NAMES OF DIOSPYROS KAKI.

BY HENRY LOOMIS.

EDITOR HORTICULTURIST:—In the introduction of the Japanese Persimmon it was discovered that there was much confusion and uncertainty as to the proper nomenclature of the different varieties; and, even when the true name

was obtained, it was sometimes a word difficult to transfer properly into our language. Suitable names were therefore substituted in some cases for the uncertain and undesirable terms.

Owing to this want of uniformity in the Japanese names, those not familiar with the subject might infer that there is a larger number of choice varieties of Persimmon than really exist. The following list comprises most of the leading Japanese varieties, and is chosen from descriptions and plates of about 50 different kinds.

1. *Gosho* (from “go,” the Imperial, and “sho,” palace), also called *Yamato* and *Kinerigaki*. This is medium to large in size, flat or turnip-shaped, of a peculiar deep red color, sometimes yellowish, and has a melting, rich flavor that is unsurpassed. It is extremely popular and called “King of the kaki.” Improperly called “Goshio.”

2. *Yemon*. The name is possibly from “uye,” above and superior, and “mon,” a contraction of “mono,” a thing, signifying a superior variety. (In pronunciation the U is nearly silent, and has probably been dropped.) It is sometimes called “Uemon.” This is a very common and popular variety in the Yokohama market. It is brought there in tight casks from the surrounding country, and by being kept in this way for a short time develops a very fine flavor. It is sometimes designated as “Tarugaki,” from “taru,” a tub. One of the casks was received from Japan last year, and although generally overripe many of them were in a fair state for preserving. This demonstrates that the fruit can be shipped without injury to any part of the country, as the best winter apples can not be sent to Japan without serious loss. The fruit is shaped like a tomato, is of a yellow to reddish orange color, and large size.

Some specimens, and especially when the trees are young, are seedless. The flesh is solid and it is not generally used for drying. Improperly called "Emong," "Emon," "Ahmong," "Among," and "Tarrakaki."

3. *Hiyakume*. From "hiyaku," a hundred, and "mome," a measure of weight, signifying that its weight is three-fourths of a pound. It is round like an orange, light yellowish color, and large in size. Ripens early. It is used to some extent for drying. Improperly called "Hacume," and "Hacome."

4. *Daidaimaru*. From "daidai," a species of bitter orange and maru round, signifying orange-shaped. This is sometimes classed with the preceding which it most nearly resembles, but in western Japan there is a marked difference between the two. It is of a light yellow (sometimes slightly green) color, and of medium size. Grown largely in Kiusiu in western Japan. Improperly called "Diediemawru."

6. *Yedoichi*. From Yedo and "ichi," first signifying Yedo's number one persimmon; slightly oblong, and sometimes round. Flesh soft; fine flavored; dark red, with spots of black around the point. It is the same or very nearly the same as the Kurokuma, from kuro, black, and kuma, the edge or border, referring to the dark colored apex. Improperly called Edoichi, Edoechi.

7. *Tanenashi*. From tane seed, and nashi, the negative indicating the seedless variety. This has but recently been known in eastern Japan. It is probably the same as found on the island of Kiusiu and seen in the market of Nagasaki. It has not appeared for sale in the markets of Yedo or Yokohama. It is described as very large, oblong in shape, with pointed apex, yellowish red with dark spots and of a fine flavor.

From all accounts it would seem to be a valuable variety.

8. *Zenji* or *Zenjimar*. The derivation of this word is doubtful. It may have originated from zen or sen, names of Japanese coins, and it would signify that it is round or oblong like a piece of money (the word maru meaning round). This is the earliest variety and is very abundant in eastern Japan. It is of rather small size, slightly oblong or round; the color red with dark spots; flesh solid and very sweet. It is sometimes designated as kizarashi from ki, a tree, and sarashi, to expose to the sun, i. e., it ripens on the tree, in distinction from yuzarashi which is ripened by the use of hot water (yu). Kizashi and Kizawashi are incorrect, as are Zingi, Zingimar, Zengi, Denji or Dzen-dimar.

9. *Hachiya*. From the name of a small village in the province of "Mino," where it originated. It is large, oblong, with pointed apex, dark with red black lines about the point; flesh soft; season from latter part of October to January. When dried it has a white coating of sugar that exudes from the fruit and resembles figs. It is grown chiefly in Koshu, about 100 miles north of Tokio. Improperly called Hachiga, Hatsiya, Hachia and Haychuya.

10. *Minogaki*. From "Mino," a province in Central Japan and kaki (changed to gaki for the sake of euphony). Pronounced me-no-ga-ke, (a as in far). Called also Minodzuru from suru or tsukuru, to produce, meaning the product of "Mino."

This is similar in shape, size, and quality to the *hachiya*, and seems to have no essential difference. It is also very popular in the dried state.

11. *Mitsubachiya*. From "mitsu," honey, and *hachiya*; honey flavored *hachiya*. It is not so large as *hachiya*,

more elongated and lighter colored. A very good variety.

12. *Tsuru*. From *tsuru*, a crane; called also "Tsurushi," and "Tsurunoko," each of which signify the son of a crane. This resembles the *Hachiya*, except that it is much smaller.

13. *Tsunomagari*. From "tsuno," a horn, and "magari," bent, *i. e.*, horn-shaped. The apex of this variety is usually curved, and hence its name. It is oblong, and yellowish red. This is spoken of highly, but I am not familiar with its merits.

The *Amagasaki*, from "amai," sweet, and "kaki," is a general name for those that are sweet and palatable. I have imported ten of the above varieties, and can furnish them to any who desire to try the merits of the same.

It is probable that some other valuable varieties may be found, as the cultivation of this fruit for the foreign demand is of but recent date. Until within a short time the best fruit was found only in certain localities, and good specimens of the *kaki* were not always plenty, even in *Yokohama* market. The last few years has shown a marked improvement in this as in all other fruits.

AUTUMNAL PICTURES.

I see the fields where cattle graze,
The hills soft meshed in silver haze,
And gold-brown brook and ancient bridge,
And old red mill beneath the ridge,
And dim lights on the orchard side,
With moss-grown trees low branching wide ;
The hamlet nestled in the glade—
A drowsy nook that loves the shade ;

The dusty highway, long and brown,
Slow creeping out beyond the town,
To breast the hill-side in its strength,
A silent treeless mile in length,
Far to the hauging woods on high
That with their verdure soothe the eye
With myriad dyes of dusky green

That wear September's richest sheen.

O'er old stone wall the blackberry twines,
Inlaced with wanton gadding vines,
The clematis and wild fox-grape,
The shad-bush and the feathered brake,
And woodbine curled in cedar spire
That soon shall glow a line of fire ;
Not darker did the elder gleam
With fruitage dipped in stygian stream.

All freaked and splashed with guiltless blood,
The sumach flares along the wood ;
The mullein takes its lonely stand
Upon the hilly pasture land,
Where slow the cricket's voice is heard
Plaining some monitory word,
Shrilled by a small black-coated friar
Who preaches 'neath the furze and brier.

The golden rod from myriad whorls
Its sunny oriflamme unfurls,
And triumphs o'er the dusty way,
Companioned by the thistle gay,
That spreads a disk so rosy fair
To feed the pretty birds of air,
And foremost, with a twittering note,
The dainty goldfinch swells its throat.

The noontide warms the quiet air
With scent of apples spiced and rare,
And quinces by the mossy well
Feel in their veins old Midas' spell,
While clusters on the bronzing vine
Breathe out an odor half divine.
From thick embroidered, bosky trees
Comes out the murmurous hum of bees.

Far off the golden stubble land
Lies in a warm and glowing band,
As if old earth, sunned through and through,
Had ripened to a richer hue ;
Clouds mottled like the ringdove's breast
Move softly onward towards the west,
With rifts of deep and tender hue,
A nameless depth of gentian blue.

In perfect beauty, flushed and sweet,
Dear Autumn comes with glowing feet ;
Her tanned cheek wears a sunset dye,
A laughing light is in her eye ;
About her shapely ankles brown
Swells out a modest russet gown—
With here and there a color dash—
A breast-knot of the mountain ash.
Her round arms globed melons bear,
And scarlet leaves have crowned her hair.

—Augusta Larned.



Rod and Gun.

LAKE PILARCITOS FISHING.

About the present time fishing in this water is decidedly good for the experienced angler, who, of course, is well furnished with all the appliances for the sport. The trout here, the present year, are generally of good size, ranging from half a pound to a pound and a half. It is now too late for the fly, and bait fishing has to be resorted to. Trolling also with the spoon is, at this lateness in the season, found to be of no effect. As to baits, worms are difficult to be had in our dry months, even if the fish would readily take them, which, upon trial, it has been found they will not. Boiled shrimps appear to be the favorite enticement, or, better still, well-prepared salmon-roe, picking out the eggs, if possible, and running the hook through three or four of them, or pressing pieces of the mass round the shank of the hook, either alone, or above the tail of the shrimp, which may be entirely or partially stripped of its scales. The salmon-roe seems to be a great attraction to the fish, at any rate, and is apt to collect them round the angler, which is a very desirable thing in so extensive a sheet of water as Lake Pilarcitos. A rather large fly-rod—say about fourteen feet in length—is the thing to be used. This enables the an-

gler, if he is fishing from the bank, or from a boat close to the shore, to throw out his line far enough; which, from the well-known shyness of the salmon family, is necessary to be attended to. A shorter rod will answer well for boat angling. The hook or hooks are allowed to fall to the bottom, where the fish are discovered to feed almost entirely. The float is not used by the most skillful anglers, as it does not allow the hooks conveniently to reach the bottom; although, of course, this can be done by allowing the float not to stand up in the water. Another reason with some not to have any float, is because they think it may create a shyness in this choice and timid class of the finny tribe, and keep them away from the snare with which the angler is so anxious to beguile them. It is usual to fix one, two, or three or more shot-pellets on the line, to be applied, say one, two, or more No. 4 shot-pellets, from nine to twelve inches from the hook, and about half an inch from each other, so as to avoid exciting any suspicion on the part of the fish. In applying sinkers, it is better to use several small shot-pellets, than one or two very large ones; as by adding or removing one or two of them as occasion requires, the weight on the line can be readily and accurately adjusted, if there be any current. But in still lakes, like that of Pilarcitos, it is useless, if not quite in-

jurious, to shot a line heavy enough for rapid streams, when it will lie too conspicuously, and, perhaps, therefore, uselessly heavy at the bottom. As to lines, a waterproof silk makes a good one, and for this kind of fishing it should be rather light. As to the gut leader, it should be at least six feet long, and if double that length it will be, probably, all the better; and single, as the general principle is that the finer that part of the line is the greater probabilities are of a full basket of fish. Gut, for fly-fishing especially, should not be thicker than a fine horse-hair, and yet it is so sound and strong that a skillful fisher will undertake to kill any fish under three pounds, or even much more with it, by proper management. For clear waters, both the line and gut leader should be dyed of a very delicate tint of gray or green. As to striking fish, in bait-fishing in lakes, the angler must be guided a great deal by his own judgment when angling without a float. It is rather difficult to give any rules for this operation in that case; but we find that the most experienced fishermen, when they think the moment has arrived for striking, strike very quickly and sharply, but, of course, with a properly modified strength or violence.

But we fear we have wandered too much from our subject—Lake Pilarcitos. Here, as elsewhere, the season for trout-fishing has nearly closed, there being a little more than one month remaining. But now, in closing our subject (and our remarks are intended rather for tyros in the angling art, than for the experienced and skillful), we wish to observe that the surroundings of this lake are most beautiful and enchanting. They possess a most romantic wildness and loveliness. To see the two branches of the lake and its shores, especially where the board-

ing-house is situated so snugly embosomed in a variety of fine trees and shrubs, in the calmness of the sunny mornings of our generally delightful climate, or its surface when rippled by the breezes which traverse the canyon, or the whole of its scenery under the glows of sunset, entrances the spirit of the visitor, and adds greatly to the pleasure of the piscatorial sport and amusement. Nor must we omit to mention that the small hostelry at the head of the lake, where anglers sojourn and are entertained, is all that can be desired in clean and good fare, excellent beds, and convenient accommodation in every particular. The host and hostess, Mr. and Mrs. Ebright, are unremitting in their kindness and attention to their guests. The charges are extremely moderate, both as to board and carriage hire to and from the place. The Southern Pacific cars leave Townsend street at several hours during the day, and the traveller alights at Millbrae Station, where by previously telegraphing to Mr. Ebright, a carriage will be in readiness to convey him to the lake. On Saturdays, by taking the 8:40 train, the carriage is always in readiness for passengers at Millbrae. Lastly, the boats and their appurtenances are all that the most fastidious in such matters can possibly desire. The lake is rented by the Sportsman's Club, and only members can use it, unless a special permit be given by the President of the Water Company. Still, one word more—the best fishermen can average about this time from ten to twenty delicious speckled trout per day.

P. S. Since writing the above, the term of the lease to the club has expired. We hope it will be renewed next year.

SAN FRANCISCO, October 12th.

Selected Articles.

THE QUINCE.

We have frequently mentioned the Quince in our columns, and, by selecting articles from papers published in various sections of the country, have endeavored to show that Quince culture was generally esteemed by writers as a desirable and profitable branch of horticulture. And yet the fact remains that comparatively few of our farms have a Quince tree on them. In some sections the question seems to have been settled in favor of this fruit, and some effort is made to grow it, but even in such localities the culture is limited. We sincerely hope, however, that our readers will do more in this line of fruit culture, and to aid those who have no knowledge of the manner of propagation and the necessities of the business we will give the necessary information.

The Quince is generally propagated by cuttings or layers. If in the spring the young shoots are bent down, and so buried that a few buds are left at the extremity above the ground, they will throw out roots before the beginning of autumn, and these can be removed and set out. Sometimes they do not root until the second year, but usually they do the first. It does not require more than two or three years, if the cuttings or layers are well taken care of, for them to produce trees fit to be removed as standards.

The soil should be rich, and the standard of quality should be that it will produce good corn or potatoes. It should be kept well cultivated. Thomas says that an application of good manure should be made every year or two, and that a thin sprinkling of salt over the surface in the spring has been found beneficial. In planting a Quince or-

chard, the distance between the trees should be about ten feet.

The different varieties are as follows: The Orange Quince—large, roundish, with a small, short neck, and surface of a golden color. It is of excellent flavor, and ripens soon after mid-autumn. The Orange is the most common variety. The Pear Quince is rather large, with a roundish, oblong body, and with a dull, rich yellow surface. It ripens very late in the autumn. The Portugal Quince is quite large, of yellow color, and is more juicy than the others. It is a superior fruit, but is not productive. Rea's Mammoth has a resemblance to the orange, but is larger. It is of good quality. The Angers Quince is similar to the orange, but ripens later. It originated in New York State, and is of good quality. Then we have the Paris Quince, which is not equal to the Orange or the Angers.—*Western Rural*.

FORESTRY—THE VALUE OF CATALPA.

The testimony is becoming cumulative, and comes from every quarter, as to the urgency that exists for the planting of forests in the United States to repair the waste occasioned by reckless destruction, so as to provide timber for the inevitable wants of the future. Congress has appointed a commission, of which F. B. Hough, of Lowville, New York, is Chairman, to report on the whole subject of forests and forestry, timber demand and supply, and its relations to the industries of the nation. This is only following in the steps of older governments, where this important subject has been assiduously studied for generations. But the genius of Americans does not lead them to depend on governmental promptings and leadership, they being competent to project and carry out in their personal or co-

operative capacity enterprises of the greatest moment.

Thus we have already many examples of individuals engaged in extensive tree planting, notable among which is that of the Messrs. Landreth (the seedsmen of cosmopolitan fame), of Bristol, Pennsylvania, who already have 5,000 acres on the Rappahannock appropriated to this industry. Scores of Californians have devoted a large number of acres to the growth of the Eucalyptus. The transcontinental railways have also given attention to this subject, some of them appointing foresters and promoting sylvi-culture along their lines.

The veteran car-builder, Mr. E. E. Barney, of Dayton, Ohio, has done a good service to the country by collecting and publishing facts as to the great value of the Catalpa tree (*C. Bignonioides*) and the importance of its extensive cultivation in groves.

Some of the facts he presents are truly startling. Thus, he says: "There can not be less than 200,000,000 ties in the various railroads in the United States. At 200 ties per acre, it has required 1,000,000 acres of well-timbered land to furnish them. As the average life of ties is hardly more than five years, it requires 200,000 acres of land each year to keep up the supply. Three times that amount is required each year to furnish the lumber used in bridges and rolling stock. So that the lumber on 1,000,000 acres of land is required every year to supply the wants of our railroads for all purposes.

"Samples of Catalpa, taken at random, indicate that this wood will bear the pressure to which it is subjected when used as railroad ties. Two Catalpa railroad ties have been in use near our office over four years, and twelve others for the last five months. All hold their spikes well and show no in-

dication of mashing more than the oak on each side of them, and over both of which heavily loaded trains pass almost hourly.

"A Catalpa gate post was cut for fire wood and found in fair condition after doing service for nearly a century. Col. Cockrum has known it in use, without stain or decay, for fifty years."

The rapidity of the growth of Catalpa in youth is astonishing, and it seems to grow equally well in any soil. It will grow from Iowa in the north to Florida in the south. The propagation is very simple: by scattering the seed on land either recently cleared or only partially so; or by raising the plants in a seed bed and setting them out. Catalpa also takes a fine polish and is an admirable ornamental cabinet wood. It is quite time that farmers should be wise enough to plant trees, not only enough for their own needs and that of their less provident neighbors, but also to supply the wants of our numerous railroads.—*Rural Press*.

IN THE RAINY SEASON.

The *Bulletin* has for years urged by every possible argument and illustration, the planting of trees both in town and country. It is gratifying to note a growing taste for tree culture in this State. Hundreds of places have been made very attractive in this way. The change is so great that if one had not traveled on some roads for three or four years, he would hardly recognize places. Bald and unsightly homesteads have been redeemed, streets have been lined with trees, new avenues have been laid out, small parks have been planted, and the face of the country, especially in the bay counties, has been wonderfully changed. Of course there are hundreds of neglected places—homesteads on which an ornamental tree has

never been planted. But the work already done will have a prodigious influence by way of example. Probably there is no place in the State where so much attention has been given to the tree planting as in Oakland and outlying towns. A large part of the town site was originally covered with evergreen oaks. It is creditable to the early settlers on the opposite side of the bay, that they carefully preserved their trees. An ordinance was early adopted that no tree should be removed without the permission of the city authorities. Many trees stood right in the centre of streets, and people were content to go around them for years rather than have a single tree destroyed. But as improvements progressed it became necessary to remove many of these trees from the streets. But not one of these was removed without permission of the Council, and that is only given when it is shown that public convenience requires it. But for one tree thus removed a hundred trees have been set out. In a few years the city will be embowered in trees, and of much handsomer varieties than the low branching live oak. Of the varieties planted the Eucalyptus is the most prominent, and has been on the whole the most satisfactory of all the evergreen trees. Large outlying tracts have been planted with this tree, the rows standing about as thick as corn in the field. The trees in some of these plantations are now sixty feet high. They require no further attention. The holders of these tracts have nearly doubled their value in this way. When the lands are further improved for building purposes, a large portion of these trees will be cut out for firewood or timber.

Besides the varieties of Eucalyptus, the drooping elm, and the cork-bark elm have been planted to a consider-

able extent, and both sorts do very well. There are two trees which ought to receive considerable attention here, viz.: the White Ash and the Black Walnut. We have seen specimens of both these trees which were very thrifty, having grown more rapidly than similar trees in the Eastern States. Some of the more costly dwellings and churches have now interiors finished in White Ash; the timber is also in good request at all times for agricultural implements and a hundred other uses. Black Walnut never was more extensively used than now in the manufacture of furniture, doors, and so on. The planting of such trees now can hardly be called an experiment, because it is known that they will grow here, and that the demand for the timber will not be less in our time. Of all trees for lining dusty roads none are equal to the Eucalyptus. When once fairly rooted, they grow without further attention, and they have the great excellence of clearing the foliage from dust beyond all other evergreen trees. Along the dustiest roads one may note the bright foliage of these trees as if they had been washed in a recent shower. The long pendulous leaves swaying in the wind presenting a very smooth surface, afford no place for the lodgment of dust. Another tree possessing in some degree the same quality is the long-leaved Acacia. Its branches are stiffer and do not sway so much in the wind; but in respect to cleanliness by the-road side it ranks among evergreen trees, next to the Eucalyptus. The Chestnut trees planted three or four years ago are already coming into bearing. Handsomer nuts were never seen than some recently exhibited from a four year old Italian Chestnut tree. The timber of this and the native, or Eastern Chestnut tree, are very desirable for finishing interiors,

and for some kinds of furniture. But it can not be counted upon as a shade, or road-side tree. All the varieties mentioned, and many more, can be had of any of the more prominent nurserymen in this city, or in the suburban towns.

BEAUTY IN COLOR.

It is certainly not true that the birds which—if Mr. Darwin's explanation of beautiful plumages is to be trusted—are most sensitive to the beauty of color are chiefly fruit-eating or berry-eating. On the contrary, the most beautiful, like the goldfinch of this country (England), are chiefly seed-eating, not fruit-eating or berry-eating, and therefore can not have learned to enjoy bright colors, if they do enjoy them, through association with their food; while some of the most voracious of the fruit-eaters and berry-eaters—blackbirds and thrushes—are, if we may judge by their plumage, and if we reason on Mr. Darwin's assumption as to the origin of bright plumage in birds, no great admirers of colors. Again, the humming bird, according to Mr. Wallace, far from being chiefly a fruit consumer, is in the main insectivorous, and will not live even on honey without a supply of insects.

The peacock, again, with his brilliant plumage, is almost exclusively a grain eater, and though he is very destructive to gardens, is not a devourer of fruit or of berries, at all events to anything like the extent of a host of other much tamer colored birds. Numbers of purely worm-eating, insectivorous, carnivorous birds, again, have a very fine plumage, like our English shrike, for instance, so that in these cases, the pleasure in color—if they have it, as Mr. Darwin's theory would assert—has certainly not been inspired by associa-

tion with their favorite food. In fact, we believe the *Cornhill* reviewer's theory that the æsthetic delight in color originates in fruit-eating habits, to be as devoid of foundation as a theory which is not at variance with all the facts, but only with the greater number of them, well can be.

Again, if in the ultimate analysis, we admire sunsets and moonrises and the starry night, and Titian and Turner, because our ancestors were fond of oranges, apricots, and yellow gooseberries, and currants and plums, why do we not also shrink from all these colors which, by our barbarous forefathers were still more closely associated with pain—such as the color of blood, for instance, or the color of ice and snow, or the colors of the animals they most dreaded? Is the sense of beauty in color nothing but the balance of the pleasant against the unpleasant associations connected with any one color? Would the color of deadly nightshade be esteemed ugly, if no wholesome fruits existed of the same color? and is the sense of beauty we attach to its color, attenuated, imperceptibly but really, by the great experience of mankind and birdkind of its pernicious character? If so, whence the delight in a deep blue of an Italian sky? No fruit that we can remember, of any kind at all, exhibits any such shade. Do we admire a lovely child's cheek because it reminds us—or at least reminds the race—of the peach when it is ripe, or rather admire the ripe peach as we do because it reminds us of the beauty of a lovely child's cheek? Does the sense of beauty trace its descent downward from the associations of the animal nature with its food of long ago, or upward from the associations of our human nature with the highest aspirations of man as man? From all we

know on the subject, we believe the latter.—*The Spectator*.

INFLUENCE OF FORESTS UPON RAINFALL AND TEMPERATURE.

Fautrat has continued his observations upon the temperature, the hygroscopic condition of the atmosphere and the rainfall over forests and woods, as compared with those over adjoining open territory, noting at the same time the amount of water in the soils. The conclusion at which he arrives affords us, in California, much encouragement to plant forest trees, cultivate timber and create woods of different trees, among which the Eucalyptus deserves to rank high. He had previously found more moisture and more rainfall over a forest of deciduous trees than over open land. The amount of water received by the forest soil was less, however, because the trees kept part of the rain from reaching it. But, on the other hand, the tree-covering so diminished the evaporation from the forest soil that the latter retained much more water than did the open land. Similar observations have since been made upon forests of evergreen trees and adjoining open land. The results are similar in kind to those with deciduous trees, but more marked. The rainfall over a pine forest was, on the average, 10 per cent. and that over a forest of oak and beech 5 per cent. more than over adjoining open fields. The total rainfall over the pine forest during 14 months was 33.1 inches; that over a sandy plain at a distance of 1.9 miles, only 29.9. Of that which fell on the forest only 18.6 inches reached the ground. But through the influence of the trees, moss, and fallen leaves, the evaporation was so decreased that the forest soil retained a good deal more of the rainfall than the open lands. Among the important gen-

eral inferences from these observations are that forests (1) tend to equalize extremes of temperature; (2) act as condensers of atmospheric moisture, hence (3) increase disposition of dew on neighboring lands, and (4) attract more rainfall; (5) prevent part of this from reaching the soil; (6) enable the soil to retain much better what it does get, so that it has more for future supply of springs and streams than the open land, (7) and thus tend to prevent both floods and drought. These conclusions apply with especial force to evergreen forests. The economy of nature in covering sandy and calcareous regions with forests of pine thus becomes clearly apparent.

SARRACENIA VARIOLARIS.

An interesting experiment has been lately made by J. H. Mellichamp, Bluffton, S. C., in the *American Naturalist*, in which he considered that he had completely proved, contrary to the conclusions directly opposed to him by another writer on the same subject, that the sweet secretion at the mouth of the tubes in the leaves of the above plant was simply a lure to insects, and not stupefying or intoxicating, as had been supposed. Mr. Mellichamp procured about mid-day, from a neighboring pine barren, a number of leaves of the above plant which were brilliantly colored and secreting freely. While still fresh, the upper portions of these leaves were cut off and split open, thereby exposing the honeyed secretion on the internal surface, which was very abundant and glistening, sweet to the taste and viscid to the touch. These were then flattened out on a large newspaper, the whole surface of which was covered with them. Many house-flies were soon attracted and commenced to feed, and he carefully watched their motions without any

interruption for the space of one hour. The result was precisely as previously stated. In no instance did he discover the slightest unsteadiness or tottering in any of the flies, although he watched some of them feeding at one spot for at least ten minutes, at the expiration of which time they flew off apparently unhurt. They continued feeding and flying off from the leaves during the hour he watched them, and certainly not one fell, nor was there any indication at any time of either stupor or intoxication.

These experiments he repeated in the same way another time (but later in the day), and as carefully as on the previous occasion, and with precisely the same results; also on the next morning with plants which had been collected the day before, and these seemed to secrete still more freely. He therefore very reasonably questioned whether flies and other insects are indeed intoxicated from eating the honey when they are *within* the tube, and asked why should not the same intoxication result when the tubes are opened and flattened out? He concluded then (as he did before), that it is only the peculiar conformation of the leaf in its overhanging hood and internal slippery surface which entraps and finally destroys insects, and that the sweet exudation is only a lure, and not intoxicating in any way. He was led here to remark that after flies and other insects slip and stumble, if they were indeed intoxicated or stupefied, it seems likely that they would remain at the lower portion of the leaf, and that their motions would be feeble and sluggish. On the contrary, their efforts for escape are most active and vigorous, the flies flying and buzzing continually, and other insects incessantly climbing and falling back. It is only after being exhausted by their

efforts that they eventually get slimed by the liquid at the base of the leaf, and stupor then overcomes them.

He had seen ants and occasionally flies, also, fall immediately as they entered the leaves before they could have eaten honey. He was further led to remark, that if this sweet internal secretion be stupefying, that outside on the wing (the "trail") must be equally so, and therefore insects ought to be found at the base of the leaves on the ground. He had never seen such, nor had he ever heard of any other persons observing dead or intoxicated insects outside.

HYBRIDIZATION OF FRUITS.

I was glad to see you directing public attention to this very interesting subject, the pursuit of which, whether by natural or artificial fertilization, will tend so much to the acclimatization of European fruits in districts of the colony not previously found suitable for their perfect development.

You are certainly in error in supposing that the series of experiments which I entered upon thirty years ago have been suspended; they are, on the contrary, being carried out with greater vigor, and are followed with a larger measure of success than at any previous period.

The fruits which have had most of my attention are the Peach, Apple, Mango, Almond, Nectarine, and Apricot; my first object being to raise from seed numerous improved varieties of each of them, which, being natives of the country, will be hardy, and productive in our climate; in this respect following the example set by the Americans, in whose country for nearly 100 years this course has been adopted, the result being that by careful selection of only the choicest sorts out of the mil-

lions of seedlings grown, and increasing them by budding or grafting, they possess some of the best Peaches, Apples, and Pears in the world.

With the further improvement of Peaches the path has been made comparatively easy, as I possess and have distributed about twenty good and distinct sorts which bear well in this and the surrounding districts. These embrace white, yellow, and red fleshed peaches, slipstones and clingstones, and ripening at various periods of the season extending from November to March. As these cross with one another, the progeny will doubtless assume new forms all over the country. Every year now produces one or more new and desirable kinds in my own grounds; as for instance, three years ago I first fruited a fine early slipstone peach, with pale yellow flesh, and having fine double blossoms, pale pink approaching to white. This peach is evidently a cross between the Metuah Peach, which I raised twenty-two years ago, and the double-blossomed China Peach, ripening about six weeks earlier than the former, and a month later than the latter.

The greatest difficulty in thoroughly acclimatizing any particular fruit, in a climate not naturally suited to it, will be experienced in obtaining the first few sorts from seed, as a base of operations. This I suffered from with the peach for very many years. When I first devoted myself to the pursuit, the only peach which was grown here was the Newington clingstone, and I consequently sent money to trusty friends in Sydney to secure the choicest peaches in the market, regardless of price. The first success from this source was my Metuah Peach, a large yellow flesh slipstone, having the flavor of an Apricot, and sometimes measuring ten inches

round. About the year 1853 I introduced the flat China Peach, and I think the late Captain Wickham had at a rather earlier date introduced the common round China, and the double blossom peaches.

I shall at all times be glad to confer with persons who succeed in fruiting any really good peach, and to test it in my experimental grounds to prove its merits. Several valuable peaches have been raised by other colonists, some of which are in my collection—such as Mr. John Cribb's clingstone flat China, a round slipstone by the late Rev. Mr. Mowbray, a white clingstone by Mr. John Anderson called the Criterion, and a slipstone by Mr. Smellie called Smellie's Superb.

Should any of your readers wish to do something for the country of their adoption, in this direction, I would suggest to those living in this district, and possibly Wide Bay and Burnett, to sow seeds of the choicest Apples, Pears, Nectarines, and Apricots procurable. No one should go into it largely unless possessed of ample means and an amount of patient determination above the average. I have raised only one apple, the "Canvade," which is up to my standard. It bore fruit the twelfth year from seed, and was a sight to gladden one's eyes. The fruit is delicious and beautiful, being in every way equal to its parent, the Devonshire Quarrenden, which does not bear a crop in this district, while the Canvade bears abundantly. Although it would be undesirable for most persons to commit themselves largely to an expensive pursuit which produces such uncertain results, I would warmly encourage every one having a garden to carry out my suggestion on a small scale, and would strongly urge any one who succeeds in raising in this manner a valuable and

productive fruit to submit it to some known authority on the subject who could judge of its merits, so that if worth propagating, buds might be obtained, and the sort multiplied to prevent its being lost.

With your permission, I may perhaps send you some samples of my peaches, if the approaching season proves favorable, with some comments upon them.

A. J. HOCKINGS, Brisbane, Australia.

THE PLANTING SEASON.

A few weeks will probably bring us to the seed sowing and transplanting season in California. As soon as the rains have fairly begun, and this occurs sometimes in November, and sometimes later, we enter upon a prolonged period, during which seeds maybe successfully sown, as our seeding time varies with different plants, and different parts of the State, from the first rains in the fall until the regular Eastern spring draws near. Thus we have a very long planting season, for a California winter is little more than a prolonged spring, attended by vernal warmth and verdure. As with seeds so with plants, trees and shrubs for transplanting. As soon as the rains come we enter upon a period of several months, during which the forest, orchard or garden planter may look about him for desirable growths.

There is every probability that the coming planting season will be one of unusual activity throughout our State. The abundant rains of last winter have so moistened the lower strata of the soil that a moderate amount this year will insure successful growth. This harvest's abundance will bring a good measure of coin to our farmers' pockets, and there will be a general disposition to plant trees, shrubs and seeds, both for utility and adornment.

We look for a time of unusual activity in this respect, and consequently the demand will be great for material to intrust to the soil. This is a gratifying prospect, for the effort to diversify production by the introduction of valuable large and small fruits, vegetables and cereal plants, is one which promises general prosperity, and the movement toward covering unoccupied spaces with growths, whether they be for fuel or timber, for shade or for the increase of the natural beauties of our favored State, is one which has both practical and æsthetic excellence.—*Pacific Rural Press*.

NEW STOCK FOR PEARS.

Having a group of *pyrus japonica* seedlings which I noticed to be unusually fruitful, some five or six years ago, I have kept the stock since that time for the purpose of raising seedlings for hedge plants. The habit and vigor of growth of these plants suggested the idea of using them as stocks for budding with the pear. I reasoned as follows: This *pyrus japonica* is quite as nearly allied to the common pear as is the quince; indeed, it is rather classed as *pyrus* than *cedonia*. It is a more hardy variety than the quince, being never injured in root or branch by the winter. It is vigorous, and adapts itself to a variety of soil, and is in this respect quite in contrast with the quince stock. Lastly, it will be likely to dwarf the pear, and induce fruitfulness quite as much as the quince. Reasoning thus, I made trial upon a few stocks during the last summer, which were planted with no reference to this purpose. The result was that the buds "took" with great readiness, and we have young pears with luxuriant growth upon this stock.

My partner and I are so well pleased with the appearance and promise of this stock that we have planted out our whole crop of last year's seedlings, about 15,000, for the purpose of budding, this August. We find the habit of growth of the seedlings to be clean and upright, quite in contrast with the plants usually propagated by root cuttings. The average height of the plants in the seed-bed the first season was a foot and a half, although many attained to a height of nearly three feet, and would have taken a bud, the first year, from seed. Possibly this particular variety and its descendants may be more vigorous than the common type. However this may be, it is clear that such proceedings will work well. To my mind the prospect is decidedly encouraging that a new and valuable stock for dwarfing the pear is here promised. But I am fully aware that the experiment is not yet tested to a conclusion. Yet it can be a question of a comparatively short time before definite results will be obtained.—*W. C. Strong, in Gardener's Monthly.*

PLEASURE FOR CHILDREN.—Douglas Jerrold wrote thus pleasantly for child life: "Blessed be the hand that prepares a pleasure for a child, for there is no saying when and where it may again bloom forth. Does not almost everybody remember some kind hearted man who showed him a kindness in the days of his childhood? The writer of this recollects himself, at this moment, a barefooted lad, standing at the wooden fence of a poor little garden in his native village, where, with longing eyes, he gazed on the flowers which were blooming there quietly in the brightness of a Sunday morning. The possessor came forth from his little cottage; he was a wood cutter by trade, and spent

the whole day at work in the woods. He had come into the garden to gather flowers to stick in his coat when he went to church. He saw the boy, and breaking off the most beautiful of his carnations, which was streaked with red and white, he gave it to him. Neither the giver nor the receiver said a word, and with bounding steps the boy ran home. And now here at a distance from that home, after so many events of so many years, a feeling of gratitude which agitated the breast of that boy expresses itself on paper. The carnation has since withered, but now it blooms afresh."

CURING MILDEW IN GRAPE VINES.—A correspondent of the *Gardener's Magazine*, England, calls the attention to the lime remedy for mildew in grape vines, as follows: Secure a few large pieces of lime fresh from the kiln, place them in a heap on the floor of a shed, and gently sprinkle the heap with sufficient water to slake the lime slowly. Only enough water must be applied to cause the lime to fall to a powder in a gradual manner, so that when slaked it will be perfectly dry and warm. When the lime is ready, put it into a muslin bag and shake the bag over the bunches and every other part of the vines on which mildew is visible. The dusting is best done in the afternoon, so that the lime can remain until the next morning, when it must be syringed off with clear tepid water, and, if necessary, another dusting should be applied the second or third day after if any trace of mildew is left. In the case in which I saw lime employed for destroying mildew, only one application was necessary to effectually remove every trace of mildew, although the vines were badly infested. From this it will be seen that I did not try the remedy myself, but I saw the

vines that had been so treated in a fortnight afterwards, and I could not detect any signs of mildew, although the appearance of the vines distinctly showed that they had been dusted with lime, and it had not been washed off so carefully as it might have been. As I felt interested in the case I was careful to ascertain later in the season if there had been any further appearance of mildew on the vines that had been so treated, and I was assured that it had not again showed itself.

BLACKBERRIES.—Were the attention of the public invited to a plant that by proper culture would bear most valuable pearls, or nuggets of gold, some, probably, would be willing to pay well for that plant, and give it good cultivation. But health is better than treasures and should be more diligently guarded.

The blackberry, so well known as a luxury for the table, should be most highly estimated for its medicinal qualities. It was evidently designed by the Creator, in part, as a preventive and curative of diseases common at the time of its ripening. Just then bowel difficulties are common, for which this excellent fruit is one of the best of remedies. To this the medical profession have borne ample testimony. During our late war, while the soldiers were suffering much from dysentery, blackberry cordial, blackberry jelly, leaves and the berries were in great demand.

Now, with a knowledge of these two qualities so marked, luxuriousness and medicinal, combined in this fruit, obtained at little expense, ought it not to be cultivated in every garden? By it how many lives of children might be saved from the fatal effects of unripe fruit and early vegetables. One row of twenty-five hills would produce an

ample supply for an ordinary family, both summer and winter. A few years ago the following statements were published: "Over 100,000 pounds of dried blackberries were sold in Nashville, Tenn., in one year. When carefully dried they are said to retain their original taste better than any other fruit."

Most persons would agree that the rose has enough in its perfume and beauty to sustain its pretensions to be queen of flowers; but it seems that the rose can be made exquisite also to a third sense. Not long ago a confection of rose petals was served to Emperor William. It was the gift of an English lady, and came from Alexandria, where the rose thus prepared is considered a strengthening as well as delicate dish; but Egyptian cooks are said to be the only ones who understand the art of preparing it, and the right species of rose for this purpose grows only in that region. A Smyrna house, however, exports jelly of roses. Perhaps research might find a way of converting other flowers besides Eastern roses into delicate food. In that case, cookery and floriculture would strike up a closer alliance than now seems possible for them to have.

NEW INSECT POISON.—A new and said to be valuable poison for killing insects is thus mentioned in the *College Quarterly*, the organ of the Iowa Agricultural College, and which was written, presumably, by Mr. Budd, professor of horticulture:

"Last winter the college received, for trial, a quantity of the material called by the manufacturers, 'London Purple,' and designed to be used for killing the Colorado potato beetle (the 'potato bugs' of common parlance). Upon trial it was found to be valuable,

killing the old as well as the young insects with great certainty. The virtues of London purple lies in the arsenic which it contains, just as in the case of Paris green. There are, however, several advantages possessed by the new poison over the old, among which are (1) its extreme fineness, permitting it to be mixed with water; (2) its adhesiveness; when once applied it adheres tenaciously to the leaves,—due, no doubt, to its finely divided condition; (3) its purple color enables one always to detect its presence on leaves, even when it exists in but very small quantities; this will not only guard against accidents, but at the same time be of considerable account in enabling one to always know when it is necessary to make another application; (4) its cheapness as compared with Paris green. It will be impossible to say just what the cost per pound will be, until a considerable quantity has been brought into our markets; it will, however, in all probability, not be more than one fourth that charged for Paris green."

Editorial Portfolio.

OUR FRONTISPIECE.

A SWEET RIND LEMON.

There is now much demand for a good lemon, as our California seedlings are found to be undesirable in the market. The only trouble has been in the lemon and not in the capacity for growing the fruit, because the new Sicily seedlings and grafted fruit which are coming forward show excellent characteristics. We present our readers this month with a colored illustration of one of the sweet rind lemons shown at the late State Fair by D. C. Hayward, of Orange, Los Angeles County.

We are again under many obligations

for the engravings of this fine variety to the *Pacific Rural Press*, as also for the description which we now present to our subscribers and readers. Mr. Hayward's exhibit attracted much attention at the fair, because of the beauty, fragrance, and other good qualities in the fruit shown. He showed budded trees of this variety, which were three years old, stood eight feet high, and bore from 16 to 20 lemons about the size of the one shown in the engraving, viz: about eight by nine inches. Mr. Hayward informed the reporter of the *Press* that by some mistake his name was not regularly entered at the fair, but the committee recommended the award of a special premium to him for this fruit.

Mr. Hayward's establishment at Orange, Los Angeles County, is well worth a visit. He has seventy acres in orchard, and twenty acres in nursery, having 8,000 orange and lemon trees. These include several especially fine varieties, besides that shown in our picture.

PUBLICATIONS RECEIVED.

Vick's Illustrated Monthly Magazine for November. This beautiful, instructive and interesting periodical, is, if anything, improved in all its delightful features. Besides its correctly drawn and splendidly colored frontispiece, it abounds and is embellished throughout its enlightened pages with handsome engravings of plants, flowers, and headpieces. In the introductory paper there is given some useful information how to prune evergreen and ornamental trees. The next article is "A Few Useful Flowers Illustrated." After that there is a small chapter on "Ampelopsis Veitchii." Then a letter from England on horticultural subjects and flower shows there. The remainder of the

number is filled with a variety of the usually interesting matter on floral and horticultural objects.

Joseph W. Vestal's Wholesale Trade List of Roses, Greenhouse, Hothouse, and Bedding Plants, &c., &c., for 1878. Cambridge City, Wayne Co., Indiana.

Retail Price List for Fall of 1878 and spring of 1879, of Fruit Trees, Grape Vines, Strawberry Plants, Nut-bearing Trees, Catalpa, Evergreens, etc., of suitable size to be forwarded by mail, cultivated and for sale by Storrs, Harrison & Co., Painesville, Lake County, Ohio. Also Catalogue of Bulbs, Winter Blooming Plants, &c., for Fall and Winter of 1878, with directions for the culture and management of Bulbs and Roses.

Rochester Commercial Nurseries. Wm. S. Little's semi-annual Circular of Wholesale Prices for the Autumn of 1878.

Semi annual Trade List of the Niagara Nurseries for the Fall of 1878. E. Moody & Sons, Proprietors, Lockport, N. Y.

Dayton Star Nurseries, established 1858. Wholesale Price List for the Fall of 1878. Hoover & Gaines, Proprietors, Dayton, Ohio.

Wholesale Price List of Grape Vines, Fruit Trees, etc., 1878. T. S. Hubbard, Fredonia, N. Y.

Wholesale Catalogue of Fruit, Evergreen and Ornamental Trees, Shrubs, Roses, etc., for the Autumn of 1878 and Spring of 1879, offered for sale by John Saul, Washington, D. C.

A Retail List of Japanese and other Lilies, Orchids, Bulbs, &c., &c. The New Plant and Bulb Company, Lion Walk, Colchester, Eng. New Plant and Curio Merchants, importers and exporters to and from all parts of the world, 1878 and 1879.

Wholesale Price List of small Fruit

Plants, etc., for the Fall of 1878 and Spring of 1879. Grown and for sale at Pleasant Valley, Small Fruit Nursery, Moorestown, New Jersey.

Price List of 1878-9 of Santa Clara Valley Nurseries, San Jose, California, established 1852, Bernard S. Fox, Proprietor, Mr. Thomas Meherin, Agent, No. 516 Battery street, San Francisco, (Post office box 722.) The assortment of Fruit and Ornamental Trees, Evergreen Trees, Shrubs, Vines, Climbers, Plants, &c., contain many more varieties than are mentioned in the above price list. Call at the nurseries or the depot on Battery street for a more descriptive catalogue for size and price.

THE JAPAN PERSIMMON.

The Rev. Henry Loomis has just published a series of chromo-lithographs of the *Diospyros kaki* or Japan Persimmon, which, with the letter-press description, form an attractive volume. Nine of the leading varieties are illustrated in natural size and colors, and a view is given of the tree itself. The introduction of the Japan Persimmon into California is of considerable interest to fruit-growers. The tree, which has proved itself perfectly adapted to the soil and climate of the State, is clothed with beautiful, glossy foliage, and is worthy of cultivation for ornament alone, while the fruit is not inferior either in size or attractiveness to the orange. It is the most highly prized of the native fruits of Japan, and if its quality is equal to its magnificent appearance, it will prove a valuable acquisition. The book can be obtained from the publisher at 421 Sansome street.

HON. MARSHALL P. WILDER.

We have the pleasing intelligence that this aged, revered and highly dis-

tinguished gentleman having reached a short time since his eightieth birthday, the Massachusetts Horticultural Society celebrated the event by the fiftieth annual dinner at Parker's, Boston. It is but seldom permitted to any public benefactor like the Colonel to enjoy so long a career of activity and usefulness. For more than fifty years Colonel Wilder has taken a brilliant lead in promoting the most valuable objects connected with agriculture, horticulture, and pomology in this country, having also been President for a long period of the American Pomological Society. And this venerable and eminent horticulturist has illustrated his knowledge of horticulture by the most successful practice in the cultivation of fruits, and especially of pears, on his grounds at Dorchester, Mass. Nor have his operations been confined to fruits, but he has paid much attention to trees, flowers, and indeed to horticulture generally. Nor can there be any one more esteemed and loved in private life than the subject of this notice, and as ex-Alderman Breck remarked at the dinner in occasion of his honor, "who is well known throughout the length and breadth of our country, and whose name in England, France, Belgium and Holland is held in high esteem by the pomologists and horticulturists of those countries." At the celebration of his anniversary the Colonel delivered a most able and interesting response to the address of the Chairman, on the subject of horticulture, its history and progress. If but very few of mankind can attain the distinction in both public and private life that the Colonel has, we in an humbler sphere, can at least, have the pleasure of acknowledging his merits, and endeavor to follow his good example.

FRUIT EXHIBITS AT THE LATE MECHANICS' FAIR.

One of the most attractive and handsome features of the display of the productions of California was the exhibit of Bananas by Mr. J. M. Asher, of San Diego. Our readers are aware of Mr. Asher's enterprising efforts through the mentions which have frequently been made of them. The Bananas shown at the fair were of the dwarf Cavendish variety, the bulbs of which Mr. Asher imported from Florida, and which he pronounces by far better than any of the many kinds which he has grown. These bulbs were planted out two years ago this last July. He now has, in his town nursery, in San Diego, over 50 full bearing Banana plants, and the others are rapidly coming into fruit. In all he has nearly 500 plants in good growth, and is furnishing bulbs to those who wish to test their growth. The fruit was rather small in size and not ripe enough to enable us to pronounce personally of its flavor, but the San Diego *Union* has "no hesitation in pronouncing these Bananas, in richness of flavor, and otherwise, the finest they have ever eaten." We are glad to know that Banana-growing, through the efforts of Mr. Messenger, of Orange, Los Angeles county, Mr. Asher, of San Diego, and perhaps others, whose names we do not at this moment recall, has secured a firm footing in this State.

Prominent among the exhibitors of fresh fruits were C. M. Silva & Son, of Newcastle, Placer county, whom we mentioned some time since. Their plates of mountain-grown Peaches of several varieties, Plums and Prunes, showed the fine stock of fruit trees which they are propagating. They are entitled to especial credit because they took pains to keep the display good

throughout the fair by sending fresh boxes each week.

Other fruit was received and placed before an admiring public from quite a list of growers. J. Routier, the well-known orchardist of Routier's Station, Sacramento county, sent Plums and Peaches through M. T. Brewer & Co. W. H. Jessup, of Haywards, whose Plums were lately described, showed what can be done by intelligent and untiring orcharding. The opportunity for fruit growing on the tules is vouched for by the specimens from A. T. Bigelow, of Sherman Island, and the famous fruit region near the Sacramento is represented by mammoth Hungarian Prunes from J. R. Olsen. Other creditable contributions in fresh fruits were made by Hungarian Prunes from J. W. Briggs, of San Jose, and fine mountain Peaches from E. DeLory, Coloma, El Dorado county. Grapes are well shown in the collections of Mr. Blower, of Woodland; Mr. Allen, of Allendale, Solano county; L. W. Buck, of Vacaville; and Dr. Strentzel, of the Alhambra vineyard, Contra Costa county, came in on Tuesday with his Centennial bouquet of assorted Grapes in the style that fixed the world's gaze at Philadelphia two years ago.

We are indebted to the above report of the fruits at the fair to the *Pacific Rural Press*, to which popular paper we are also under continued obligations for engravings of fruits, flowers, etc., which, as our subscribers may notice, we much improve by printing them on good paper and giving them their natural colors.

THE OLEANDER AND THE ORANGE SCALE BUG.

An idea has got abroad that the beautiful oleander originates the scale bug

that is the curse of the orange tree. We are glad to see that the more the matter is investigated the plainer it becomes that this theory is incorrect. It seems to have had its origin in the discovery that oleanders have scale bugs on them. S. Bristol of San Buenaventura has been paying some attention to the subject, and he writes to the *Horticulturist* to say that "the orange scale bug—large black or mussel shell—are each a different animal entirely from the oleander scale bug. Examined under a strong microscope, they appear as distinct and diverse as an oyster and a clam to the naked eye. And you might as well charge the oyster with producing the adjacent clam, as the oleander scale bug with producing either variety of the orange scale bug. The oleander scale bug differs radically from both these, in size, in shape, in color, in internal structure, and in place of exit for its young. The oleander scale bug looks, under the glass, very much like the barnacle, round and conical, with an aperture at the top like the barnacle. The orange scale bug is in shape oblong, resembling a mussel, and the place of exit for its young, through the posterior, lower edge of the scale. The color of the oleander scale is gray like the barnacle. The orange scale are one black and the other like a red mussel. The orange scale insect is bound fast to its shell and can not be separated. The oleander scale has a very slight connection with his shell. The orange scales are each uniformly more than twice the size of that on the oleander." Mr. Bristol adds that he has never seen an oleander scale on an orange tree, and never but one orange on an oleander, although he has oleander trees near his orange orchard. He concludes that the oleander is in no sense the author of the orange scale

bug calamity. He believes that the idea of its being a poisonous plant is equally erroneous.

THE HEALTHFULNESS OF LEMONS.

When people feel the need of an acid, if they would let vinegar alone and use lemons or sour apples, they will feel just as well satisfied, and feel no injury. And a suggestion may not come amiss as a good plan when lemons are cheap in the market. A person should in those times purchase several dozen at once and prepare them for use in the warm days of spring and summer, when acids, especially citric and malic, or the acids of lemons and ripe fruit, are so grateful and useful. Press your hand on the lemon and roll it back and forth briskly on the table to make it squeeze more easily; then press the juice into a bowl or tumbler—never into tin; strain out all the seeds, as they give a bad taste. Remove all the pulp from the peels and boil in water—a pint to a dozen pulps—to extract the acids. A few minutes' boiling is enough, then strain the water with the juice of the lemons; put a pound of white sugar to a pint of juice; boil ten minutes; bottle it and your lemonade is ready. Put a tablespoonful or two of this lemon syrup into a glass of water, and you have a cooling drink.

CULTIVATION OF FRUIT AND REPORT ON THE FRUIT AND VEGETABLE MARKET.

As Strawberries are still in our markets, being now in their third or fourth crop, and will be with us indeed till some time after Christmas as usual, and the planting time for them being near at hand, a few remarks concerning this most delicious and favorite fruit will not we opine, be regarded as out of

place here. There are probably a few of those in our State now actively engaged in Strawberry culture who can remember in the East (although it is about half a century ago), when there were only two varieties of this fruit in cultivation in the best gardens there, and when it was grown in very limited quantities for the market. We well remember when one or two of our neighbors picked daily fifty to a hundred boxes; and that was all that could be well disposed of at fair prices. The varieties then cultivated were the Wood and Early Virginia; the former an imported variety, the latter an American sort. Neither of these was large, but the Wood had at least two points of merit—it parted freely from the hull so that it could be picked directly into the boxes; and it also possessed a flavor much admired by the lovers of this fruit. In time, some more foreign kinds were introduced; but they were not hardy enough to withstand the scorching suns of summer and blasting colds of winter, and they were not successfully or extensively cultivated. In 1834, Hovey conceived the idea of crossing some of the foreign varieties, with the hope of producing a sort that should be hardy enough to endure our seasons there, in the Eastern States, and productive enough to warrant its extensive cultivation—a thing that could not then have been said of the larger foreign varieties in cultivation. From a large number raised from seed that had been thus crossed, he produced the well-known Hovey's Seedling and Boston Pine. Their introduction marked a new epoch in the cultivation of this fruit. The public could not deny their senses; but many thought that it was by some strange hocus-pocus that berries measuring five or six inches in circumference were produced; for they

were perfectly enormous as compared with the Wood and Early Virginia. The plants of this new and wonderful variety were sent out at five dollars a dozen; and well we, in Kentucky, remember the first plants we obtained of this same Hovey's Seedling, that afterwards became so well known throughout the country. Then but few Strawberries were grown, and those wholly about the large cities. But what a change has taken place since that year, 1836, when this variety was introduced! Then not a mile of railroad was built in this country; all the fruit (which was not much) was carried to market in wagons. Then the vast prairies of the West were an untrodden solitude. But how changed! how like a dream it seems!—the country covered all over with belts of iron, over which are constantly running ponderous engines, dragging behind them, at more than race-horse speed, cars loaded with Strawberries and other fruits, all destined for the cities, where they command generally good prices. This variety once introduced was rapidly extended, and soon could be found in almost every garden. It was at the time a most valuable berry although it was one that required fructification by a male sort to be planted with it. Soon varieties were produced which united in them all the perfect sexual organs: Longworth's Prolific (our great California berry), and McAvoy's Superior were of this sort. They were both raised in Cincinnati. Innumerable other kinds followed, Wilson's Albany, though like the Longworth, not of the very first-rate quality, is the great market Strawberry for the million East. The Triomphe de Gand, British Queen, Victoria, and Jucunda are nearly the only foreign sorts that have done pretty well in field culture in this country, in-

cluding our slope. The Triomphe de Gand is a berry of good quality and large size, yet bad shape, but should be grown in hills to give the best results. The Jucunda is also best grown in hills, and has for several years attracted considerable attention, and has proved to be valuable for market purposes in the hands of good cultivators. The berries are of large size, and it is better suited for us on this coast than in the Northern or Eastern States; but, upon the whole, the Longworth Prolific has proved, from long trial and experience, to be our best market berry, although it has not the high flavor of some Strawberries; it is, by many, thought to be rather unpleasantly acid, but eaten with sugar, we consider it the better for possessing this quality. We copy the following good and appropriate remarks from the *Commercial Herald*, relating to the Fruit Exhibition at Sacramento. The exhibit of Fruit at the State Fair far surpassed that of last year, notwithstanding the fact that the larvæ of the coddling moth have committed such wide spread devastation among the orchards of the State. For perfection and size of fruit the exhibits from El Dorado county took the palm, although a single plate of Peaches from Tuolumne surpassed anything we saw in the peach line. From Sonoma county there were no less than 123 varieties of Apples, eighty-five of Pears, four of Oranges, seventeen of Plums, and sixteen of Peaches. The Grapes exhibited from all quarters of the State were of the most tempting kind, and of infinite variety. The exhibit of Mr. Blowers, of Woodland, who has made Raisin Grapes a specialty, and has produced raisins that rival the best ever imported from the sunny slopes of Spain, was a magnificent one in the line of Grapes particularly, surpassing all

others for size. He believes that to make good Raisins large Grapes are essential, and he brought to the fair bunches of which the average berries would measure from $\frac{3}{4}$ to 1 inch in diameter. They were of the Muscatel variety. It was an excellent idea to remove the fruits and flowers from the hot upper hall where they had heretofore been exhibited to the cooler basement below. They were much better preserved at the end of the week than they usually are. The entire exhibit at the Pavilion in Sacramento was remarkably interesting, and this included contributions from Los Angeles and San Diego counties, that have never before, it is said, sent any of their products to the annual State exhibitions, were this time appropriately represented by a fine display of semi-tropical fruits—Bananas, Oranges, Lemons, Limes, Citrons and Pineapples.

We notice free and increased shipments of Apples and other green fruit to Australia and the Islands of the Pacific; also continued shipments Eastward of Bartlett Pears and other choice (hard) mountain fruits that are suited to rail carriage, and that will keep for some time to come. The fruit market continues to be well supplied with Peaches, Pears, Figs, Grapes, Apples, Canteloups, and Watermelons, Strawberries, etc. Raisins of the new crop are coming in, and are of choice quality, held at \$2 to \$2.50 per box of 20 lbs. net. Apples, Peaches, and other dried fruits promise to be exceedingly plentiful later in the season, and of better quality than ever before. All we want is a market large enough to take our surplus. Price not so much an object as a market to supply. The *Auburn Herald* has the following: Fruit is plentiful in all the foothill regions this year, and so far as the summer and fall

varieties go, is wasting for lack of a market. The fact is there are too many trees of varieties not in demand. Our orchardists should graft and bud all but a few for home use into the best known winter varieties, especially of Pears and Apples; though we could not have too many Bartlett Pears if there were once enough to begin shipping East. Wm. George had a large order last month from dealers in Corinne, for shipping to Montana. But the great demand is for the best late keepers, and this year, particularly, it is likely that every pound of Apples of this kind here fit for shipping, will command good prices, for the Apple crop in all the valley region is poor, worm-eaten and insipid; but the mountain fruit is of very choice quality. Fruit. Apples—60c. to \$1 per box; Cooking, 35c. to 50c. per box. Pears—Seckel, \$1 to \$1.25 per box. Plums—Damson, $2\frac{1}{2}$ c. to 3c. per lb. German Prunes, 5c. to 6c. per lb; Eckworth Plums, $2\frac{1}{2}$ c. to 3c. per lb. Peaches—box and basket, \$1 to \$2. Quinces—50c. to 75c. per box. Strawberries, \$4 to \$5 per chest. Figs—Black, 2c. to 3c. per lb. Oranges—Tahiti, \$35 per M. Lemons—Sicily, \$16 to \$18 per box. Limes, \$9 to \$10 per box. Bananas—scarce, \$3 to \$4 per bunch. Cocoanuts, \$4 to \$5 per 100. Watermelons, \$6 to \$15 per hundred. Canteloups, \$2 to \$6 per hundred. Grapes—all kinds, 35c. to \$1. Dried Fruit—Apples, 3c. to 6c. per lb.; Peaches, $7\frac{1}{2}$ c. to 9c. per lb.; peeled, 20c. per lb.; Pears sliced, 8c. to $12\frac{1}{2}$ c. per lb.; Plums, pitted, 12c. to 15c. per lb.; Prunes, 8c. to 10c. per lb; Blackberries, 14c. to 18c. per lb.; Figs—Black, 4c. to 6c. per lb.

FUMIGATING GREENHOUSES.—This must always be done after sundown, or in dull, cloudy weather, to avoid burning

or scorching the plants. The fumigator which I use is six inches in diameter, and is simply an iron ring formed of three-eighths of an inch round iron. It stands on three legs (of same material) each three inches high. One fumigator is sufficient for about 600 square feet of glass, and the method of using is as follows: As much wood shavings as can be held in the closed hand is laid on the floor, (if the floor is of wood or any other inflammable material, it will be necessary to lay a piece of slate or tin first), and lighted, and the fumigator is then placed over it and a good sized bunch of tobacco stems, which should be previously moistened with water to prevent blazing, on top. The greenhouse can then be shut up tight, and the apparatus will then take care of itself. This method is quite effectual and does not melt the operator to tears, which can not be said of fumigating as it is carried on in some establishments.—*Cor. Gardener's Monthly.*

THE JORDAN VALLEY.—The Jordan Valley in Palestine, was one blaze of beautiful flowers, growing in a profusion not often to be found, not even in more fertile lands. The ground was literally covered with blossoms, and the great red anemone, like a poppy, grew in long tracts on the stony soil; on the soft marls patches of the delicate lavender color were made by the wild stocks; the retem, or white bloom (the juniper of Scripture), was in full blossom, and the rich purple nettles contrasted with fields of the kutufy, or yellow St. John's wort. There were also quantities of orange-colored marigolds, and long fields of white and purple clover, tall spires of asphodel, and clubs of snapdragon, purple salvias and white garlic, pink geraniums and cistus, tall white umbelliferous plants, and large camo-

mile daisies, all set in a border of green herbage, which reached the shoulders of the horses.—*Letter from Palestine.*

CALIFORNIA has 60,000 acres of vineyard, producing 10,000,000 gallons of wine annually, besides vinegar, raisins, brandy and fresh grapes. The other States produce 4,000,000 gallons of wine annually.

THE Rio Vista *Enterprise*, of the 1st instant, says: Mrs. M. E. Hawley has in her garden, on Sacramento street, a fine orange tree which has the appearance of being quite fruitful. Five half-grown oranges are on the tree, and they appear determined to ripen in good time.

It is said that the strawberry shipments from Alviso reaches fifty chests daily and will for several weeks yet.—November 15th.

METEOROLOGICAL RECORD.

FOR THE MONTH ENDING OCTOBER 31ST, 1878.

(Prepared for THE HORTICULTURIST by THOS. TENNENT, Mathematical Instrument and Chronometer-maker, No. 18 Market Street.)

BAROMETER.

Mean height at 9 A. M.	30.12 in.
do 12 M.	30.12
do 3 P. M.	30.11
do 6 P. M.	30.10
Highest point on the 22d at 12 M.	30.25
Lowest point on the 14th at 3 P. M.	29.87

THERMOMETER.

(With north exposure and free from reflected heat.)

Mean height at 9 A. M.	61°
do 12 M.	67°
do 3 P. M.	69°
do 6 P. M.	63°
Highest point on the 21st at 3 P. M.	79°
Lowest point on the 30th at 6 P. M.	54°

SELF-REGISTERING THERMOMETER.

Mean height during the night	51°
Highest point at sunrise on the 21st	56°
Lowest point at sunrise on the 27th	46°

WINDS.

South and south-west on 2 days; north and north-west on 7 days; north-east on 8 days.

WEATHER.

Clear on 19 days; cloudy on 3 days; variable on 9 days.

RAIN GAUGE.

	Inches.
12th	0.04
14th	1.16
Total	1.19
Previously reported	0.63
Total for the season	1.82



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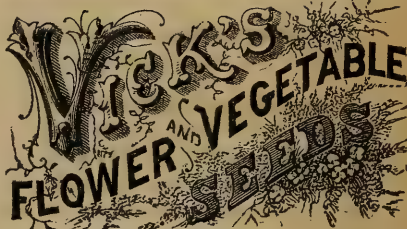
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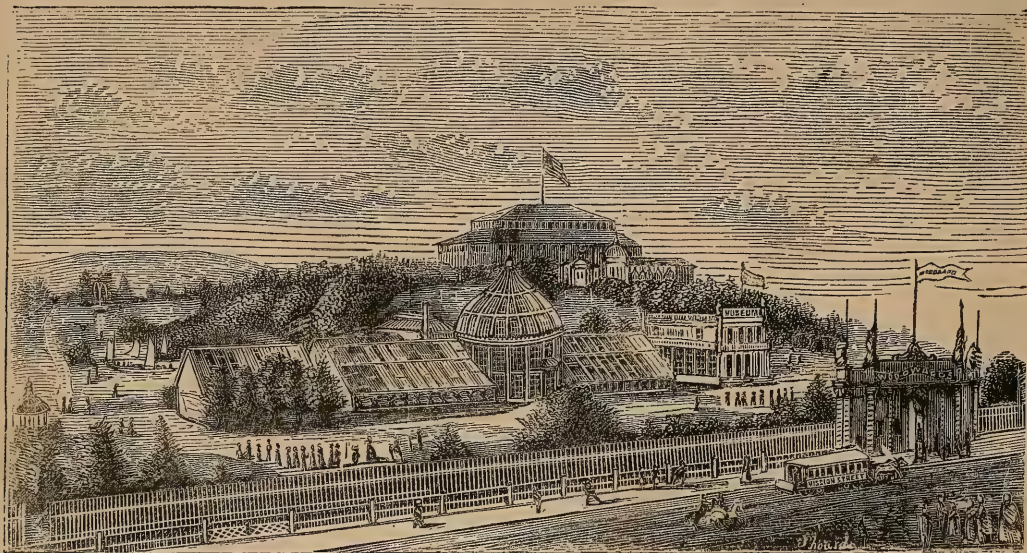
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AND FLORAL MAGAZINE.

E. J. HOOPER, Editor.

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PUBLISHED BY JOHN H. CARMANY & CO.

Under the auspices of the Bay District Horticultural Society.

OFFICE, 409 WASHINGTON ST., SAN FRANCISCO, CAL.

THE CALIFORNIA HORTICULTURIST

..... AND

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Landscape, Ornamental and Market Gardening.

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PROSPECTUS

OF THE

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We would respectfully announce to the Press, and the reading public generally, that the well known HORTICULTURIST will hereafter be

EDITED BY MR. CHAS. H. SHINN, OF NILES.

Mr. Shinn is a young man of much literary promise, who has contributed horticultural articles to the *Evening Bulletin*, *Rural Press*, our own journal, the *Southern California Horticulturist*, the *Gardener's Monthly*, *Vick's Monthly*, the *Rural New Yorker*, and *The Garden* of London. His work has all been of a fresh and yet practical type, and has been widely read and copied.

Under Mr. Shinn's management the EDITORIAL DEPARTMENT will be greatly enlarged; more original matter of especial interest to Californians will be given; Native Plants, Climatic Relations, Arboriculture, and similar topics, will receive more attention; and all Selected Matter will be rigidly condensed. The treatment of Small Gardens, Flowering Plants, Ferneries, etc., on our coast, will not be neglected.

We desire to increase our list of *Horticultural Exchanges*, and shall institute a BOOK REVIEW DEPARTMENT with the January number.

We have secured several new and practical contributors, whose names will shortly be announced. Our plans and changes will further appear in the January Number, which will be published on the first of the month.

Mr. E. J. Hooper,

who has devoted so much of his time to our interests, will not entirely leave us, but remains in the BUSINESS DEPARTMENT, and will occasionally contribute.

From this date all Manuscripts, Editorial Correspondence, Exchanges, Books for Review, etc., must be addressed to

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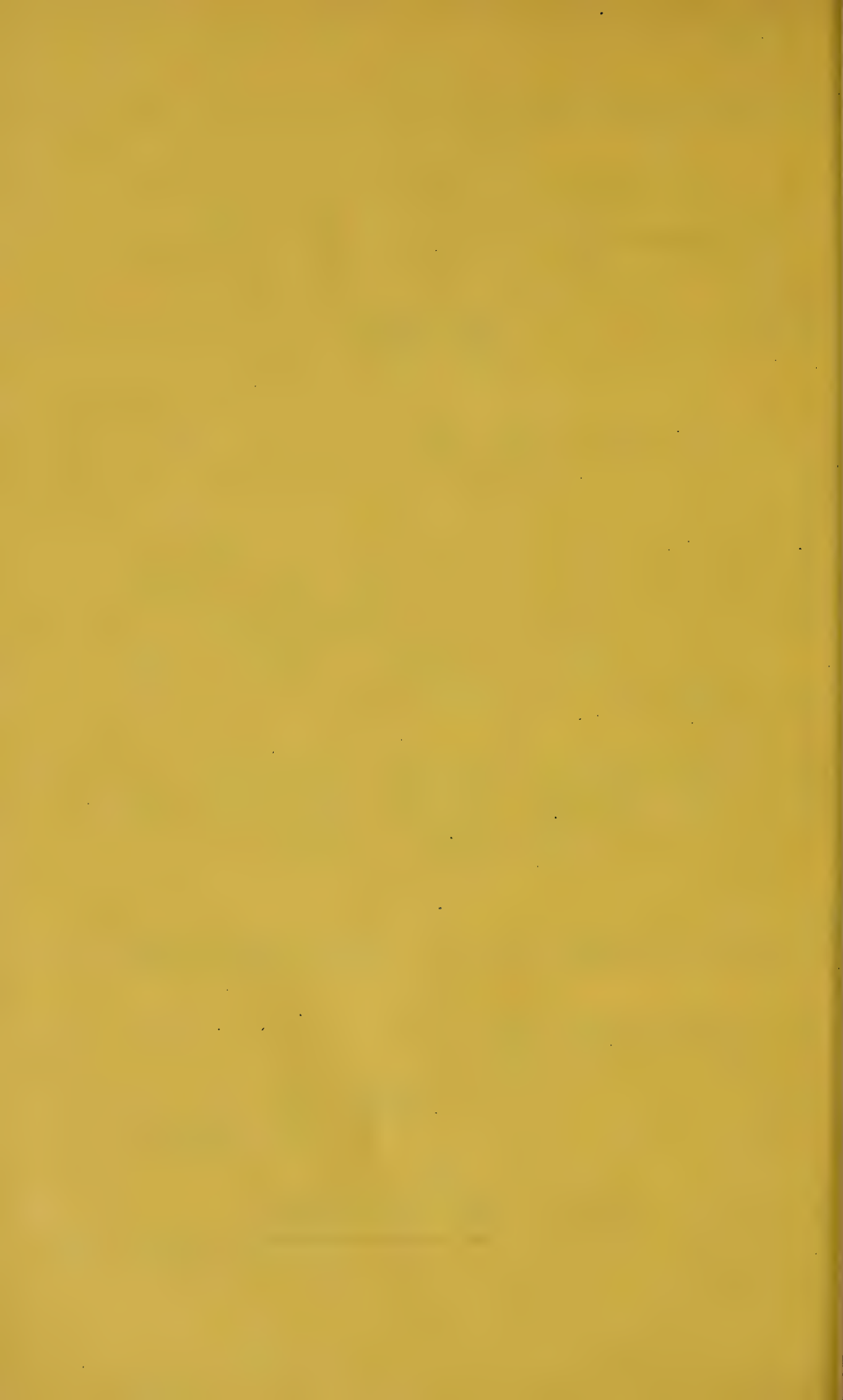
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THE

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HARDY PALMS.

BY G. P. RIXFORD.

Palms have been called "The Princes of the Vegetable Kingdom." Certainly to the eye accustomed only to the vegetation of the cooler portions of the temperate zone, they are the most unique and striking of plants. Nothing in the whole range of ornamental trees and shrubs which find a congenial home in California, attracts more attention from our eastern visitors than the few palms cultivated in the grounds of our citizens. The air of tropical luxuriance and the contrast they present to all other forms of vegetation, will always make them popular.

The list of varieties sufficiently hardy to endure our climate without protection, compared to the whole number described, is exceedingly small, yet much larger than generally supposed, and sufficiently numerous to add a variety and charm to the ornamental grounds of both city and country unattainable by the use of any other members of the vegetable kingdom.

The varieties here described are such as have already proved hardy in the latitude of San Francisco, or from the

character of the climate of their natural habitat, are likely to do so. Most of the descriptions are taken from Seeman's Popular History of Palms, Rhind's History of the Vegetable Kingdom, Simmond's Tropical Agriculture, Smith's Domestic Botany, and *Du Breuil's Arbres et Arbrisseaux d'Ornement*.

Phoenix dactylifera, *P. spinosa*, and *P. reclinata*.—*Phoenix*, the genus of which the Date tree is the most important representative, is indigenous to Africa and Asia, from whence it has been distributed to all parts of the world possessing a climate adapted to it. Seeman says: "Its trunk, marked with the scars of fallen leaves, is, in some species, so short that it hardly appears above the ground, and attains in others from forty to eighty feet in height. Its leaves are pinnatisect, bearing linear segments, the lower ones of which gradually assume, in many instances, the appearance of spines; and they are moreover more or less complicated at the base, a peculiarity distinguishing *Phoenix* from all other genera of palms. The flowers growing on branched spadices, which appear in the axles of the leaves, are of a dark yellow or yellowish

white color, and dioecious. In order to make the tree bear plenty of fruit, it is necessary to have recourse to artificial fertilization."

The Date tree is one of the most beautiful and is pre-eminently the most useful of the whole family of Palms. In northern Africa its fruit is the daily food of millions; its sap furnishes an agreeable drink, the fibres at the base of its leaves are woven into cordage and rigging; its tall stem supplies a valuable timber, and its leaves are manufactured into brushes, mats, bags, couches and baskets. Some writer has said that this one tree supplies about all the wants of the Arab or the Egyptian. "It is his corn-field, his ropery, his timber yard, his wardrobe, his winery and his general store."

It grows luxuriantly and attains a large size in many regions where the seasons are too short to mature its fruit. It well deserves a place for ornament alone, on every homestead in California where it will grow, and its ever verdant ever waving plume of feathery leaves will amply repay the little attention it requires. It is hardy in all parts of central and southern California, requiring protection only when very young. About the old Spanish Missions in San Diego and Los Angeles counties trees can be found that have attained a height of sixty feet, while smaller, though not less vigorous, specimens are met with in Sonoma and Solano counties. Last season one of these trees at Winter's in the latter county produced fruit, but it failed to mature. It is easily raised from the seeds of the common date of commerce, and at the age of three or four years forms a very attractive plant. The more usual method of propagating it, however, in date growing countries, is by suckers which spring up at the base of old trees and which readily

strike root under proper treatment.

It is quite probable that in the warmer portions of the State some of the more precocious varieties may mature their fruit. The climate of the San Joaquin valley is very similar to that of the valley of the Euphrates where thousands of tons of dates are annually produced. Two years ago a variety was brought to notice in the French Colony in Algeria, that ripens its fruit in that region in August, and it was thought would mature its crop a month later in the south of France. There is no doubt that it would succeed perfectly in this State. [See HORTICULTURIST, Vol. VII, page 295.]

P. spinosa, *P. reclinata*, both natives of the Cape of Good Hope, would doubtless prove hardy in this climate, while *P. acaulis*, a variety with a short stump which grows on elevated plains in India, would also be likely to succeed.

Phoenix is one of the most interesting and valuable genera of the Palm family, and should receive special attention at the hands of our horticulturists.

Pritchardia filamentosa, first described as *Brahea filamentosa*, is the Fan Palm of Southern California, Arizona, and Mexico. When fully developed it reaches a height of about thirty feet. There are plants of this species at San Jose with trunks twenty to twenty-five feet high and seven or eight feet in circumference, with leaves which measure with the petiole ten feet in length. There are two fine specimens in the courtyard of the college at Santa Clara, and a large one on the grounds of Geo. West, at Stockton. These plants present a very striking appearance and claim the admiration of all who see them. When the Southern Pacific Railroad penetrated the region where

these Palms are indigenous, not far from Los Angeles, a considerable number were brought to this city and now adorn the grounds of many metropolitan residences. These plants are generally living, but owing to the cool climate their growth is slow.

This Palm grows luxuriantly, says the *Los Angeles Star*, in the cañons on the slope of San Bernardino Mountain. It bears a small black fruit of a sweetish taste, which is highly prized by the Indians as an article of food. The fruit grows in a single cluster about the size of a bushel basket.

Chamærops humilis, *C. excelsa*, *C. palmata*, *C. Martiana*, *C. hystrix* and *C. Ritchiana*.—"It is a curious fact," says Seeman, "that Palms with pinnatisect leaves in the southern hemisphere, and those with fan-shaped ones in the northern hemisphere, mark the geographical limits of this order."

The genus *Chamærops*, the so-called Fan Palm, is particularly interesting to the horticulturists of this State from the fact that all its numerous species grow in a comparatively low temperature. About twenty-five species are known at the present time, and it is probable that most of them are sufficiently hardy to endure the winter climate of Central and Southern California. One of them, *C. Martiana*, is perhaps the hardiest palm known, as according to Hooker, it ascends the Western Himalaya to an elevation of eight thousand feet where it is annually covered with snow.

C. humilis is the only palm indigenous to Europe. It is found along both shores of the Mediterranean, and in Northern Africa covers large tracts. Its leaves have come into extensive use as a paper material, and the fibre of the trunk is used in the manufacture of carpets. It grows to a height of thirty feet and has already been introduced

into the gardens of this city and vicinity.

C. excelsa is a native of Northern China and Japan, where it is sometimes cultivated for its leaves and the fibre of its trunk, which are used for many domestic purposes. It grows to a height of from eight to twelve feet and is an attractive plant in the grounds of some of our citizens.

C. Ritchiana is a small palm with a creeping trunk and a much branched panicle. It is a native of Afghanistan and Beloochistan where it grows on barren hills and table lands up to an elevation of five thousand feet. The leaves are made into baskets, fans, brushes, and many other household utensils, while the leaf-bed or cabbage and fruit are used as food.

C. hystrix and *C. palmata*, the latter classed by some botanists as *Sabal palmetto*, are natives of some of the Gulf States. The former has a creeping trunk, is furnished with prickles which resemble porcupine quills, being often fifteen inches long, and produces a brown edible berry of a sweet flavor. The latter is the well-known Palmetto of the Southern States.

Livistonia sinensis, *L. Australis*, (*Corypha Australis*) are elegant and stately Fan Palms with bright, glossy green leaves mounted on strong petioles clad at the base with copious fibres, and are generally at the edges furnished with spines. The trunk is swollen at the base and always unarmed. The flowers are hermaphrodite, small, white, and arranged in axillary panicles; their fruit, a drupe, is often oblique, and always of a shining, glossy blue color, which, says Griffith, is one of the characters distinguishing this genus from *Licuala*. The *Livistonias* are great favorites in England, and many of the species have found their way into the

greenhouses of that country. The two species above mentioned are grown without protection in the south of France, and some of them are becoming common in this State. They are natives of Eastern Asia and Australia. Seeman gives an interesting account of the manner in which the genus was introduced into the Botanical Garden at Kew. "When Allen Cunningham, the King's botanist, was in New Holland he sent a case with living plants to the Royal Gardens at Kew, which on being disturbed was found to have instead of the crocks usually placed at the bottom of such cases for drainage, seeds of a Palm, nearly all in process of germination. Cunningham's attendants, too indolent to look for crocks, had substituted the seeds of the *Livistonia Australis*, which happened to be more handy. The young plants were carefully nursed, and one of them has now become one of the gems of the collection of Palms at Kew. * * * * The discovery that the seeds of Palms could be introduced most effectually by being in their native country at once placed in mould was not overlooked by Mr. John Smith, the intelligent curator of Kew Gardens. He made it widely known, and to its diffusion more than to any other circumstance must be mainly ascribed the great increase of the collections of Palms in our horticultural establishments."

"*Sabal Adansonii*, *S. Blackburniana*, *S. umbraculifera*, *S. palmetto*, (see *Chamcerops palmata*) *S. serrulata*. This genus is remarkable as including some of the most northern species of all the Palms. It is represented in the United States by three or four species, including the Palmetto of the south, *S. Palmetto*, which some botanists class as a *Chamcerops*. The genus is composed of about half a dozen species, most of which are

natives of America. They are entirely stemless or have a medium sized trunk; the leaves are fan-shaped; flowers hermaphrodite, arranged in branched spadices, small and of a dirty white or greenish color. The fruit is a round dark berry.

S. Adansonii is an almost stemless plant, a native of the Carolinas and the Gulf States. Pursh calls it a beautiful plant. The pithy part of the trunk is edible. It can be found in some of the gardens of this city and is perfectly hardy in this climate.

S. umbraculifera is supposed to be a native of the West Indies. This species has been grown in this State to some extent. *S. serrulata*, from the character of the climate of its native habitat, will certainly prove hardy here. The foliage of most of the species of *Sabal* is somewhat tender and needs protection from high winds.

Areca sapida, *A. oleracea*.—The genus *Areca* is chiefly distinguished for embracing the species which yield the well-known Betel nuts so extensively used by the Malay and Mongolian races. Chewing the nuts with lime and the leaves of a species of pepper brought from the Hawaiian Islands is practiced by many of the Chinese of this State. The genus is composed of about twenty species with pinnatisect leaves, chiefly inhabiting the islands of the Eastern Hemisphere.

A. sapida is found in New Zealand as far south as 38 degrees 22 minutes, and will therefore undoubtedly prove hardy in the latitude of San Francisco. J. D. Hooker describes it as a small Palm, the trunk of which is from six to ten feet high, and six to eight inches in diameter, bearing leaves from four to six feet long, and a glabrous, much branched, densely flowered spadix, enclosed in two boat-shaped spathes. I

grows principally in the Northern Island of New Zealand and the northern part of the Middle Island. The young inflorescence is eaten by the natives.

A. oleracea is the common cabbage palm of the West Indies. It is one of the most beautiful and stately of the Palm family. There is a cabbage palm which grows in the northern part of Florida, and if this is the same species it will prove hardy here.

Jubcea spectabilis is the southmost Palm of America. It has an arboreous, unarm'd trunk, pinnate leaves, monœcious, dark yellow flowers, numerous stamens, and an obovate, one-seeded drupe. It is cultivated in Chile and other parts of South America for its nuts and for the sap, which after concentration by boiling, is known as *Miel de Palma* (palm honey). The nuts, which are round and about an inch in diameter, are frequently seen in our markets. In habit and general appearance it is similar to the Date Palm, but the foliage is of a brighter green. The folioles are broader than those of the Date and are folded at the bottom instead of the top. It abounds in the central provinces of Chile, and is found as far south as 36°. It is a favorite variety and is grown without protection in the south of France. It can be found in the collections of several of our nurserymen and florists. Although quite rare as yet in the gardens of this State, it is well adapted to the climate and deserves to be generally introduced. The value of its nuts and sap may make its cultivation on a large scale profitable.

To obtain the "miel" says Darwin, "the tree is cut down and when the trunk is lying on the ground the crown of leaves is lopped off, the sap then begins to flow from the upper end, and continues so doing for several months; it is, however, necessary that a thin slice

should be shaved off every morning, so as to expose a fresh surface. A good tree will give ninety gallons, and all this must have been contained in the vessels of the apparently dry trunk."

The sap is concentrated into a thick syrup by boiling, and is much esteemed in Chile, where in many districts it takes the place of sugar to a great extent.

Ceroxylon Andicola (*Iriartea Andicola*) is the Wax Palm of the Andes. Humboldt found it growing nearly to the snow line in the Cordillera at the Pass of Quindiu, in the United States of Columbia, at an altitude of 6,900 to 9,700 feet, in company with oaks and other trees of the temperate zone. From the character of the climate at that elevation, even though the locality be almost under the equator, there can be no doubt that it will prove to be hardy in Central California. It was long ago introduced into English greenhouses, but we fail to find any mention of it in the catalogues here.

It is a lofty, noble Palm, surmounted by a handsome plume of pinnate leaves. The flowers are monœcious and of an intense yellow color, and the fruit is a one-seeded berry.

"The lofty, noble trunks of this tree" says W. Purdie, "are covered with a coating of rosin-like wax, which gives them a white and marble-like appearance, imparting a lively feature to the scenery, so peculiar to the Paramo of Quindiu, where the Palm abounds to an extraordinary degree, without apparent injury to the noble, but subordinate forest beneath its graceful abode. To obtain the wax the tree must be felled, and I was informed by my guide that each tree gives an *arroba*, or twenty-five pounds. The wax is used mixed with tallow for making candles (alone it is said to burn too rapidly); it is also

used alone as wax candles for offerings to the saints and the Virgin, tallow being prohibited by the laws or rubric of the church of Rome."

The wax is obtained by scraping the trunk, and after being melted and run into calabashes is ready for use. It is in considerable demand, but the supply is always abundant as it is easily procured. The timber of the trunk is used for buildings and canoes, and the leaves are not less useful to the Indians than those of the cocoanut to the South Sea Islanders.

Cycas revoluta, though not a Palm, deserves mention here. The Cycads in their growth and aspect so closely resemble the Palms that, although more nearly related to the pines, they have the same effect as decorative plants, and are made use of for the same purposes. *C. revoluta* endures the climate of San Francisco uninjured, and is a valued plant in many city gardens. It is a native of China and Japan, but has become naturalized in the West Indies and elsewhere. It is of exceedingly slow growth, but its beautiful glossy green, pinnate leaves, mounted on a short stout trunk, will always make it a highly prized ornamental plant. There are probably other species of this genus that will prove to be hardy in this latitude.

INDUSTRIAL CONDITION OF THE SLOPE.

In her fertile soil and genial climate; in her varied and majestic scenery; in her dry and salubrious atmosphere; in her extensive forests of timber, suitable for the uses of the farmer and builder; in her wide, open valleys and bare hills, ready for the plough without draining or clearing; in her abundant snows, convenient for the irrigation of her grand plains; in her long frontage on

the great ocean; in her geographical situation within the sub-tropical limits of the north temperate zone, cooled along the shore in summer and warmed in winter by the Gulf-stream of the Pacific, and in the direct line of the steam route round the world most convenient for the use of Europe, Asia and America, (which continents are, and always will be, the chief centres of population, wealth and civilization)—in all these California has great advantages; and yet she has something else, worth all these together—an intelligent, enterprising, industrious, public-spirited population, proud of their State and anxious to do their best to develop its resources and make known its merits.

These remarks have been suggested to us by W. B. West's late visit to Europe, and his efforts while there to learn as much as possible of value to our local horticulture, and his expenditures to get the best varieties of fruit not previously introduced here. It is a matter of regret that we have no comprehensive account of the improvements in the orchards, vineyards, and gardens of California since 1846. John Lewelling and Wm. Meek, both still living, are entitled, we believe, to the credit of having brought the first supply of fine fruit trees to our slope; and they were succeeded by a multitude of other laborers, among whom the names of Agustin Haraszthy, Felix Gillet, A. Bruguere, and W. W. Hollister, occur to us. We imagine that, young as our State is, she is supplied to-day with a larger variety of the best stocks of fruits, and a larger proportion of horticulturists who manage their business with the guidance of intelligent study, than any other country, not excepting France, England or Italy. It is true that the results of our enterprise are in many directions small, but this is a necessary consequence of

the inexperience and newness of the country. When we know that we have imported half a dozen of the best varieties of olive, it might still be imprudent to plant any one very extensively until we find which will be most congenial to our soil. California is like a large orchard just set out—it produces little, but promises much.

Among the new fruits which Mr. West has brought with him are the After St. John, the Bijou, and the Precocious Walnut, Barcelona and Naples filberts, various Spanish and Italian olives and oranges, and the Loja and Damsel grapes, both excellent for shipping.—*Alta*.

BIG GRAPE VINES OF CALIFORNIA.

It would be interesting to have a comprehensive description of the large grape-vines in California, with information whether any other country approaches our State in that respect, and an explanation of the causes of the greater growth here. Italy, Spain, Palestine or Persia may have vines as large as ours, but we can not find any account of them. California has, probably, twenty vines, each of which produces more than 500 pounds of grapes as an average crop. Among these are vines at Coloma and Blake's and near Montecito and Stockton—representing the Sierra Nevada, the Coast mountains north of San Francisco, the San Joaquin Valley, the Southern Coast, the level of the sea and an elevation of 2,000 feet above it. The Stockton vine, a mile southeast of the town, in the yard of Mr. Phelps' house, is a foot in diameter, and has this year produced 5,000 pounds (2½ tons), according to the *Independent*. We have heard nothing lately of the yield of the Montecito and Coloma big vines. We saw the latter

in 1867 when young, and it then bore 1,500 bunches of grapes. The Montecito vine grew from a cutting of the old big vine at the same place, set out in 1795 and cut down in 1875, when eighty years old. It had a diameter of 15 inches, covered an arbor 114 feet long by 78 wide, and averaged three tons in its annual yield. The big vine at Blake's separates at the surface of the ground into two stems, each six inches in diameter. The vine at Coloma is an Isabella; the other three are of the Mission variety.—*Alta*.

ORNAMENTATION WITHOUT MONEY.

A great deal can be done by way of home ornament without using any money, and in these hard times that is quite an item with some of us. I saw a handsome picture the other day, made of lichens and moss, sticks and other things, which had been picked up in the fields and woods. The scene was a landscape, with trees, a house, fences, hills and valleys, all composed of these common articles, but put together with such artistic skill, that it was very charming. Another lady has a rustic scene arranged on a foundation two feet square. There is a house made of tiny logs and covered with tiny shingles, made from old ones. There are doors and glass windows, a carpet and chairs, while outside an old-fashioned well-sweep contains a bucket, and a doll, dressed like a boy, stands by it with a pail on his arm. A woman at the door with a broom in her hand seems sweeping the steps. There is a creek formed of looking-glass and pebbles; and moss serves for grass.

Ferns artistically arranged help very much in home adornment, both when growing and when pressed and skillfully used.

A friend showed me a beautiful bed of ferns which she transplanted from the woods this spring. They require a shady place and considerable water. They look well when pressed in a book or between blotting-papers, to border lambrequins, or arrange in dainty baskets, and for many similar uses. I use them for spatter-work pictures.

These can be made very cheaply, and look fully as nicely after they are formed as those that are made of more expensive material.

I use cheap, white paper, shoe blacking, a blacking brush, and a fine sieve, only using a very little blacking at a time, and brushing lightly on the sieve, being careful to have each spatter very small. A great amount of artistic skill may be shown in making these pictures, both in the arrangement of the design and in the shading. Mottoes in spatter-work are very handsome. One picture I have even had a cross, with trees and ferns around it; back of one of the trees was a deer, and above was a moon and stars. It was shaded to look like moonlight. The designs are, of course, innumerable.

A great many pretty things can be made of straws. Dainty, little picture frames, delicate baskets, and vases for artificial flowers. They are far more durable than one would suppose they would be, and for variety the straws may have a tiny spiral winding of gilt paper or some pretty color.—*Rural New Yorker*.

GROWING CUCUMBER PICKLES.

After the vines have begun to bear, you can not cultivate your pickles any more, but in gathering the pickles, if there are scattering weeds, they should be pulled by hand. There is but one way in which you can have nice pickles,

and that is to gather them every day. The most popular pickle in the market and at the factories is one about three inches long and from a half to five-eighths of an inch in diameter, and in favorable weather they grow very rapidly. Pickles that are gathered every day will yield much more than those which are only gathered every other day. It is better to cut them off with a sharp knife, as you will disturb the vines less in this way.

A vine should never be lifted or disturbed more than is absolutely necessary. Where pickles can be sold at 25 cents a hundred they will be found a very profitable crop. The cost of pickling is not more than three or four cents a hundred, and in a favorable year fifty thousand or more can be gathered from an acre. At the pickle factories the price varies from \$1 to \$1.50 per thousand, and even at this price I should consider them a paying crop, for they only occupy the land for a few weeks, and a crop of turnips may be grown on the same land; for many years I have grown my largest crop of turnips in this way. Pickles may be salted so as to keep for years. There are two methods; one is to make a strong brine and cover them, and the other to fill your barrel with pickles and salt in alternate layers, and let them draw their own brine; a half bushel of salt will do for a barrel. In either case there should be a weight put on them, and the scum that rises should be removed. If your pickles are small and of uniform size, between three and four thousand can be salted in a forty-five gallon barrel. I have found linseed oil barrels excellent for the purpose. In most villages of one or two thousand inhabitants there can be a good trade in pickles worked up. I have grown from twenty to one hundred thousand

a year for the last fifteen years, and have sold most of them at three hundred for \$1, and not less than \$2.50 per thousand.—*Exchange.*

RAPID GROWTH OF THE ALOE.

Perhaps the most remarkable instance of rapid vegetable growth that has been heard of since the famous bean-vine of Jack the Giant Killer, is one which has been related to us by Professor Stowe, of an aloe, or century-plant, now growing on the grounds of one of his neighbors, at Mandarin, Fla. This aloe, during a period of several weeks from the last half of April to the latter part of May, actually increased in height at the rate of twelve inches a day—or half an inch an hour night and day—until it reached the height of forty-two feet. Having reached that height, the tree (for it is nothing else than a tree) leaned over on a neighborly orange tree to take a rest. When Professor Stowe left Mandarin, the last week in May, the flower stems had come out, but up to the last of June it had not yet blossomed. The American aloe, according to the English Cyclopaedia, has a period of from ten to seventy years, according to the climate. When fully mature it produces a gigantic flower-stem, forty feet in height, and perishes. In Florida [and California; Ed.] one sees many of these plants in various stages of growth, but we think there are few cases in which the growth is so rapid as this one related by Prof. Stowe.—*Hartford Times.*

REMARKABLE JAPANESE PLANTS.

A gentleman in San Francisco has had lately on exhibition a collection of 200 rare and beautiful Japanese garden plants which he has just brought to this country. There are no flowering

plants among them, all being evergreens of different species. They illustrate in a marked manner the Japanese gardener's skill, the trees being dwarfed and trained into fantastic shapes. An evergreen of the spruce species is made to take the shape of a cat, a dog, a crane, a turtle, a cock, a sparrow, etc., and the skill of the gardener has been such that one recognizes at the first glance what animals are represented. Many of the other plants are trained in the shape of cocked hats, which are much loved by the Japanese. Some of the trees are dwarfed and made to take their natural shape. There are small shrubs of only one foot and a half in height, which look like trees as seen through a reversed opera glass, so perfect has been their training. Many of these trees are over fifty years old, and their knotted, twisted, and stained trunks are as venerable in appearance as any to be found in the forest. There are two tea plants, the leaves from one of which sell at \$10 per pound in Japan, the leaves from the other bringing \$7. There is a palm from the Loo Choo Islands, which is as delicate as a fern, and far more beautiful. There are orange-trees, bearing choice oranges, some of which are now on the trees. There are specimens of curious grasses, some growing in long cords, and forming beautiful tassels. Among the curiosities are houses made of a curious root found in Japan, very porous in character, and in which plants can take root. These diminutive houses are covered or surrounded with diminutive shrubs and trees, which are so dwarfed that they never grow out of their just proportion to the house. All that is necessary is to pour water into the basin, and the porous roots of which these little houses are made takes it to the plants wherever they are placed.

There are models of a pleasure boat, and a merchant junk, made of this root, and having diminutive plants growing upon them. Rocks and cliffs are manufactured from this curious root, and upon them are growing grasses, diminutive trees and shrubs. Two species of cedar have been trained to form the model of the entrance to a tea garden. Some of these curiosities are very old, having been handed down from father to son for many generations. The pots in which these curiosities are placed are also worthy of examination, being remarkable specimens of ancient Japanese pottery. The designs are beautiful and the workmanship far better than that seen in the more modern porcelains. No collection like this has ever before been brought to this country.

SUGAR GROWING IN CALIFORNIA.

A California contemporary, in calling attention to the feasibility of sugar cane culture in the latitude of Sacramento, in this State, publishes tables showing the maximum, minimum and mean temperatures for the several months of the year, as between Sacramento and New Orleans. This shows the summer heat at Sacramento to be lower than at New Orleans. So far as the winter temperature is concerned it is more favorable to the crop than is that of New Orleans. Our contemporary in acknowledging the disability of summer temperature, says it is more nearly like that of Natchez, Miss., "a point further up the river but still within the region of sugar production." The real facts in the case are that but a very small portion of Louisiana and Mississippi is adapted to cane cultivation; and none thoroughly well adapted, and as far north as Natchez the cultivation of cane for sugar is a very precarious business, in-

deed. There seems no reason why portions of far southern California should not successfully cultivate sugar cane where the question of sufficient moisture can be governed. About Sacramento, however, there is no doubt but climatic conditions must preclude its successful cultivation.

HOW RAISINS ARE PREPARED.

A strip of land bordering on the Mediterranean, somewhat less than one hundred miles in length and in width not exceeding five or six, is the raisin producing territory of Spain. Beyond these boundaries the Muscatel Grape, from which the raisin is principally produced, may grow and thrive abundantly, but the fruit must go to the market or to the wine press. When the grapes begin to ripen in August the farmer carefully inspects the fruit as it lies on the warm dry soil, and one by one clips the clusters as they reach perfection. In almost all vineyards slants of masonry are prepared, looking like unglazed hot-beds, and covered with fine pebbles, on which the fruit is exposed to dry. But the small proprietor prefers not to carry his grapes so far. It is better he thinks to deposit them nearer at hand, where there is less danger of bruising, and where bees and wasps are less likely to find them. Day by day the cut branches are examined and turned, till they are sufficiently cured to be borne to the house, usually on the hill top, and there deposited in the empty wine press, till enough have been collected for the trimmers and packers to begin their work. At this stage great piles of rough dried raisins are brought forth from the wine press and heaped upon boards. One by one the bunches are carefully inspected, those of the first quality being trimmed of all irregularities, and imperfect ber-

ries deposited in piles by themselves ; so in turn are treated those of the second quality, while the clippings and inferior fruit are received into baskets at the feet of the trimmers and reserved for home consumption. A quantity of small wooden trays are now brought forward, just the size of a common raisin box and about an inch deep. In these papers are neatly laid so as to lap over and cover the raisins evenly deposited in the trays, which are then subjected to heavy pressure in a rude press. After pressing the raisins are dropped into the boxes for market.

CURIOUS PLANTS FROM JAPAN.

The number of curious and useful plants which have come to us from Japan is quite large. Among them have been fruit and forest trees, vines, shrubs, and beautiful flowers ; these are all new and important additions to our well-known varieties. President Clark of the Agricultural College, during his residence in Japan, gave special attention to collecting rare specimens of plants. The grounds connected with his residence at Amherst are filled with them, and they are thriving under his care. It will not be long before the new plants will become common, and will add greatly to the adornment of our dwellings, and furnish new and delicious fruits for our tables. The curious little climbing vine, which is called by the name of "Japanese Ivy," is already largely introduced into New England, and it is now "climbing with its toes" over our stone buildings at Wennekeni. It is perfectly hardy, grows rapidly, and has the great advantage over the woodbine, or Virginia creeper, of fastening itself to structures so as not to be torn away by winds. In the autumn its foliage changes to a dark

purple, and is really exceedingly fine.

Professor Wildburger, of the Military Institute at Farmdale, Ky., wrote to us nearly a year ago giving an interesting account of a new tree introduced from Japan, which was growing in the grounds of the institute. He sent to us also some of the fruit and leaves of the tree, which is the *Guikyō biloba*, Linn. Professor Wildburger remarks: "The tree is very rare in this section, and, so far as known, we have the only one in the United States that has borne fruit. The kernel of the nut or stone is edible, and is much prized in Japan. It is always served at the banquet, and is thought to 'promote digestion and dispel flatulence.' The tree is highly ornamental, with its beautiful pyramidal shape and peculiar foliage. On our grounds here there are two trees (only one has borne fruit) each about thirty feet high, and nine inches across the trunk at base. They are of rapid growth, standing the winter well as far north as Massachusetts in protected situations. The fruit when green resembles that of the wild plum, but when mature is shriveled and yellow."

GLAZED POTS FOR PLANTS.

Whether glazed or unglazed pots are best for house plants has been matter of dispute, the weight of authority being in favor of the latter. The fact is that both sides are right, as it depends much upon circumstances whether plants will do best in one or in the other. The following note on the subject in a recent number of *Vick's Monthly Magazine*, partially explains why no invariable rule can be laid down for all cases:

Glazed pots for plants are condemned by most writers. The majority of these writers are green-house men, or those with but little experience with growing

plants in the dry air of our parlors and living rooms; and in watering, those in glazed pots would naturally receive the same supply as others in common porous pots alongside. The evaporation from the porous pots would take place much more rapidly than from the glazed, and the one would be comparatively dry, while the other would be still wet. The next watering repeats this process, and the result is quickly seen. The plant in the glazed pot perishes at once, or drags out a sickly, miserable existence. Glazed pots can be used with good results in the parlor or living room. If the drainage is good, so that the surplus water can pass off, there are many plants that will grow well in them.

To this it may be added that many people are very irregular in watering house plants. They forget to attend to it until the dry and parched appearance of the earth admonishes them of their neglect. Of course the plant in the unglazed pot suffers worst under this treatment, for the earth gets dry from top to bottom; while in the glazed pot the great bulk of the earth, being protected from rapid evaporation, may remain comparatively moist though the top is dry.

It need scarcely be added that plants which require a wet soil thrive best, other things being equal, in the glazed pots; while those that prefer a dry soil are more likely to flourish in the others. A Calla will do well in a glazed pot kept drenched with water, and all the better if the pot is set in a pan of water; but this hydropathic treatment would by no means suit a Cactus. In short, whether glazed or unglazed pots are the better depends on the nature of the plants, on the place where they are kept, and the care that is taken of them, especially in regard to watering.

ROSES IN POTS.

The ever blooming Roses are best for house culture in pots, because they bloom quicker and more continuously than any of the others, and besides this, their style and habit of growth is more bushy and better adapted to the purpose. They can be kept nicely with other growing plants, and with proper attention to their requirements will bloom freely. (1) Do not use too large pots—if possible, not more than three or four inches. The rule is, one size larger than the plants have been grown in. The smaller the pot—provided, of course, it is large enough to contain the plant—the quicker and stronger the plant will start. It is very difficult to get a small plant to live and grow in a large pot. A Rose will not bloom much till the pot is well filled with roots; therefore, small pots facilitate quick bloom. If the pots are old, they should first be thoroughly washed. If new, they should be soaked in water, otherwise they will absorb the moisture from the plant. (2) Have good rich soil—mellow and friable. That made from old decomposed sods is best. If manure is used, it should be old and thoroughly composted; fresh manure is injurious. (3) Put some bits of broken crockery, charcoal, or other similar material, in the bottom of each pot to facilitate drainage, then enough fine earth to raise the plant to a proper height. It should not be much deeper than it was before. Next put in the plant and spread out its roots as near their natural position as possible; then fill in fine earth and press firmly down with the hand. When done the pot should not be quite full; a little space is needed for water. (4) When first potted, water thoroughly, and if the sun is strong shade for a few days; then give full light and air.

Though the plant should not be allowed to wither for want of water, the earth should get moderately dry before watering again. Too much water is worse than not enough. Very little water is needed until the plant starts to grow.—*Guide to Rose Culture.*

CONCERNING A SATISFACTORY FLOWER GARDEN.

The summer flowers are gone, and this is the month of Chrysanthemums and other blossoms of autumn. The garden presents a weedy appearance, and there is a good deal to be done in the way of trimming plants and getting ready for winter. It is time, therefore, to take a retrospective view of the year's garden, and plan a little for the future.

In the typical flower garden two objects are to be attained: First, masses of color which shall make the grounds at all seasons ornamental; second, beds of mixed flowers which can at all seasons be cut for bouquets and decoration. To have these two things is to have a perfect garden. We must in some places plant with exact and mathematical precision; in others we must scatter with lavish profusion. Looking back, in these lonely autumn months, on the work and pleasure of the garden, we will all agree that the flowers we gave lavishly to visitors from more desolate regions, or to chubby-faced children creeping lazily to school, are among our sweetest of memories. Let us then resolve that the new garden of the next year shall be a flower-missionary, a blossom-evangel.

In order to really enjoy a garden it is necessary to be intimately conversant with its very beginnings. A wealthy man should at least superintend his garden so closely as to be identified with every onward step; but here, indeed, the artisan, the clerk, and the literary

toiler, whose life is a chase after new ideas, may be happiest doing his own work, in his own diminutive garden. The child's first aspiration is for a place in which to plant, exhume, examine and replant seeds. Our grown-up ideas do not, fortunately for the cause of landscape gardening, fluctuate so often, but still, like children, we play with the impulses of nature, we bud our common roses, we graft our unmarketable grapes, we root our surplus plants, we follow everywhere our own sweet will. Herein lies much of the charm of that eternal pursuit—gardening.

Whoever wants a satisfactory garden should be in the habit of taking notes of new or rare plants he happens to see in other gardens or nurseries, or read of in reputable journals. These notes should, so far as possible, give time of bloom, color of flower, style of growth, treatment, etc. A small book, ruled in columns, will be found convenient. The following may serve as a suggestion: Name—*Aucuba Japonica*, or Gold-dust tree. Description—Evergreen shrub, leaves blotched with yellow. Very ornamental berries also are showy. Treatment—Good drainage and a warm place. Increased by cuttings and layers. Remarks—Liable to attacks of the scale bug. Wash with whale-oil soap. Name—*Calycanthus*, Florida, or Strawberry shrubs. Description—Deciduous, large. Flowers are double, chocolate-colored, fragrant. Treatment—Wet soil. Grows from seeds and cuttings. Remarks—We have a native species, not so fragrant.

By following some such plan faithfully for a few years the fund of accumulated information will be surprising, and it will be in a tabulated and easily accessible form.

The first line of thought, now, concerns winter and spring-blooming

bulbs, which may be planted so closely as to make a mass of bloom, and then taken up, as the leaves wither, and summer bulbs put in their place. Who of us would be without the "shining yellow Daffodils," the holiday, bannered Tulips, the veined cups of Crocus, the stately clusters of Narcissi, and the glowing Anemone groups?

Before October's golden days slip into the cloud and chill of November, the bulbs for the next year should be ordered. Then prepare the ground and plant early. Do not forget the Hyacinth, which succeeds so well out doors here, or the Oxalis, which makes a beautiful spring border, or our own wild Tulips, the cyclobotheras.

Then scatter here and there, ready for the early rains, a few seeds of hardy annuals, such as Collinsia, Whitlavia, Rocket Larkspur, Sweet Pea, which will in due season give you satisfaction pressed down and running over.

CHARLES H. SHINN.

Niles, Cal.

THE TRUFFLE IN ENGLAND.

The *habitat* of the truffle is downs and forest lands, in parks, under various trees. "Its darling woods are hilly, shadowy, yet light and lofty woods of Chestnuts, Oak and Beech; never in Pine forests; among soil formed of decayed vegetation, in dry earth, mixed with wood, in open woodland districts where rain and worms act easily; damp, warm summers are most favorable." It abounds at Blenheim, at Avington, at Audley End and in the parks of many English mansions. Fosbroke states that William Leach, who came from the West Indies with some dogs trained to hunt truffles, proceeded from Land's End, in Cornwall, to the mouth of the Thames, determined to settle on the spot where he found them most abundant.

After four years' wandering he settled at Patching, near Arundel, in Sussex, where he carried on the business of truffle hunting. Truffles in England are gathered at two periods; the white, which have no odor and are sold for seasoning, in May; the black during a month before and after Christmas, when they are hard and have acquired all their perfume. The presence of the truffle may be easily detected by the earth being slightly raised about the "nests," and also by their peculiar smell, which is sometimes so great as to make the hounds lose scent of Reynard. The truffles lie from two to eight inches deep, and vary in size according to the number in the "nests," which is from five to twelve. Krombholz speaks of some as large as a man's head, and weighing a pound and a half. The average size in England is from a nutmeg to a hen's egg. In some districts, according to Mrs. Hussey, it is a lucrative business, "for the season begins at 'bird shooting' and lasts till spring, the produce selling at two shillings and six pence per pound."—*Good Words*.

CULTURE OF THE SNYDER.

The way in which the Snyder Blackberry is planted and cultivated by Messrs. J. R. Gaston & Sons to make it produce 194 bushels per acre is as follows: First, procure good, strong plants raised from root cuttings, as these are the only kind having a good supply of small roots, which will insure their growing after being planted. The ground selected for planting should be high and rolling, and moderately rich. Plow and harrow the ground the same as for planting corn, and mark out rows nine feet apart. The plants should be planted in these rows three feet apart; and their method of planting is to dig a hole with a spade, making it large enough to ad-

mit all of the small roots without crowding. Then cover about eight inches deep with fine, moist dirt, and pack well, in order to keep them from drying out.

The planting should be done in the fall, during the months of October and November, and covered with coarse straw for the first winter, but after that they need no protection of any kind. If impossible to plant in the fall, plant as early in the spring as possible. All the cultivation needed is to keep the weeds and sprouts cut down between the rows, and keep the dirt fine, and to keep the weeds from the row, and not cut the sprouts in the row, for these are to be the bearing wood for the next year. During the month of June the new sprouts must be cut off about four feet from the ground. This will cause the side branches to develop more rapidly. In the spring, during the month of April, the branches should be cut off about eighteen or twenty inches from the main stalk. This trimming will take off a good many fruit buds, which if left on would produce berries, but by taking them off the size and quality of the berries from the remaining buds are greatly improved. After the picking season is over, all the wood that has borne fruit should be cut out and burned, for a Blackberry branch bears fruit but once. The bush that grew last year bore fruit this year, and the new bush that grew this summer will bear next summer, and so on.

THE LARGEST PLANT IN THE WORLD.—We are accustomed to regard the great trees of California as the most gigantic specimens of vegetable growth known to man, but such is not the case. There is a submarine plant growing in the North Pacific Ocean which, according to Professor Reinsch, dwarfs all others

in its vast proportions. The *Macrocystis pyrifera*, one of the *Melanospermeæ*, has been known to grow to such an extent as to cover vast areas of the ocean bed. One specimen by measurement was found to cover *three square miles*, and the stem from which the growth proceeded was eight feet in diameter. It is almost impossible to conceive of such a plant, or how a system of nourishment can be maintained through such extended channels in the living organism. Nature performs strange freaks, and certainly none can be stranger than the fact that of this gigantic species there are some specimens so small as to be microscopic, or only to be seen by the aid of powerful objectives.

PARTIALITY OF LIGHTNING FOR POPLAR TREES.—Professor Colladon some time ago advanced the opinion that poplar trees are more liable to be struck by lightning than others. A Geneva correspondent has sent to *Nature* a photograph showing the effects of lightning on one of those trees in that vicinity, which tends to confirm the views of Professor Colladon. He says: "The lightning chooses by preference the poplar as a conductor to reach the ground, and the case is striking here, where the tree is surrounded by other kinds, particularly firs, taller than it. Two great branches, of forty-five and fifty centimetres in diameter, which surmounted it, were struck by the lightning and led it to the ground without having received the least apparent injury, while the trunk below them is absolutely shattered. This is a fresh proof that the upper parts of the trees, especially of poplars, are excellent conductors of electricity, which only rends or shatters the wood when it finds a passage in the trunk. Other recent observations prove the preference of light-

ning for trees situated near streams or reservoirs of water, so that the best conductor for a house is a lofty tree—a poplar especially—situated between the house and a well, a pond or a neighboring stream.”

OLIVE PLANTING IN CALIFORNIA.—On the fine ranch of ex-Senator Cole, on the Cahuenga road, that gentleman is practicing on olive culture. He has commenced planting this remarkable and profitable fruit in good earnest, and if care is taken in the management of the trees the first season his success is assured. The olive, though one of the hardiest trees, and the longest-lived fruit tree known in history, is slow to start when first set out, and sometimes remains in a dormant condition all through the first year, but when well cared for and well tilled makes a more rapid growth than many other fruit trees. In well-cultivated ground it bears at an early age, and bears constantly. No fruit tree in Los Angeles has been so badly used as the olive. Because it is brave and hardy, and grows with little irrigation, it has been left uncared for and allowed to shift for itself. The consequence is that many of these neglected trees bear little or no fruit, while those that are well cared for bear abundantly. We hope others will follow the lead of Senator Cole and plant thousands of this valuable tree.—*Los Angeles Herald*.

A MURDEROUS SEA FLOWER.—One of the exquisite wonders of the sea is called the Opelet, and is about as large as the German Aster, with a great many long petals of a light green color, glossy as satin, and each one tipped with rose color. These lovely petals do not lie quietly in their places, but wave about in the water, while the Opelet clings to

a rock. How innocent and lovely it looks on its rocky bed! Who would suspect that it would eat anything grosser than dew or sunlight? But these beautiful waving arms, as you call them, have use besides looking pretty. They have to provide for a large open mouth, which is hidden down deep among them—so hidden that one can scarcely find it. Well do they perform their duty, for the instant a foolish little fish touches one of the rosy lips he is struck with poison as fatal to him as lightning. He immediately becomes numb, and in a moment stops struggling, and then the other arms wrap themselves around him, and he is drawn into the huge greedy mouth, and is seen no more. Then the lovely arms unclothe and wave again in the water.

NEW USE FOR LEMON VERBENA.—The *Scientific American* remarks that the well known fragrant garden favorite, the sweet-scented or Lemon Verbena (*Lippia citriodora*), seems to have other qualities to recommend it than those of fragrance, for which it is usually cultivated. The author of a recent work, entitled “Among the Spanish People,” describes it as being systematically gathered in Spain, where it is regarded as a fine stomachic and cordial. It is either used in the form of a cold decoction, sweetened, or five or six leaves are put into a teacup, and hot tea poured upon them. The author says that the flavor of the tea thus prepared “is simply delicious, and no one who has drunk his Pekoe with it will ever again drink it without a sprig of Lemon Verbena.” And he further states that if this be used one need “never suffer from flatulence, never be made nervous or old-maidish, never have cholera, diarrhoea, or loss of appetite.”

Editorial Portfolio.

OUR FRONTISPIECE.

The Pumalo, Java orange, or *Citrus decumana* of the botanist, concerning which there was an article respecting its nature, cultivation and prospect in our last issue by R. J. Trumbull, and of which he has imported a large number, is at present known to but a limited extent in California. We have seen very few specimens of the fruit which were raised in this State, and they have been generally passed off as huge specimens of the orange or lemon. They are called Shaddock in the West Indies from the fact that a Capt. Shaddock of some merchant vessel brought the first samples from China or the East Indies. The fruit is generally from double to treble the size of the common orange or lemon. Mr. T. Hart Hyatt states in the *Pacific Rural Press* that he has raised them in China, and had matured fruit on small trees only three feet high. But, says this gentleman, it remained for California to furnish an example of precocity, a most remarkable *lusus naturæ*, such a freak of nature as puts our ideas of the knowledge of the habits and eccentricities of plant creation quite to the non-plus.

The little tree which forms our colored frontispiece to this number of the HORTICULTURIST, of which Mr. Hyatt sent a photograph to the *Press*, was raised by his daughter, Mrs. George North of Marysville, in this State, from seed planted last February, and was but two months from the time it showed its head above ground until it put forth its first blossom. The tree was about three inches high when two months old, and the blossom, the size and appearance of an ordinary orange blossom.

The artist of the *Press* enlarged the plant, so that it is about one and one-half times the natural size. Mr. Hyatt sends the following additional statement to the *Press*: "Mrs. North has about 100 trees from seeds planted in a bed at the same time, but none of the others have shown the precocity here exhibited. They are to be transplanted to my daughter's summer home at 'Mount Glenwood,' Yolo county, about two miles westward of the town of Winters, where they have already quite a plantation of orange trees and other semi-tropical fruits."

The fruit of the Pumalo is coarser than the orange or lemon, but is very juicy and of pleasant flavor. The outside rind is very thick and coarse, and the inner skin very bitter, and has to be taken off very carefully when eaten, or it will destroy the pleasant flavor of the fruit. They are raised in China, especially by foreigners, to make an excellent kind of tonic bitters. It also makes an excellent conserve. The trees grow to the size of the common orange or lemon, and from present indications are likely to come to bearing maturity in California at a much earlier age than either of the other fruits, and may be cultivated with success, I think, in California."

As Mr. Trumbull observed in his article on this fruit in our last number, we are not yet sure that we have obtained in this State either from China, Java, or Australia, the very best varieties of the Shaddock. Time only will tell, when all those which have been imported have fruited. Mr. Trumbull also stated that "it is an established fact that this orange deteriorates when grown from seed, and if we are to have valuable fruit we must procure the very best foreign trees, and having proved them, propagate from their buds." The best

authorities on botany in describing the Shaddock, state that "the shoots are pubescent; the leaves large with a winged stalk; the fruit very large, weighing sometimes ten to twenty pounds, roundish, with a smooth, pale yellow skin, and white or reddish sub-acid pulp. When the fruits attain their largest size they are called Pompoleons or Pompelmousses; those of the smallest size form the 'Forbidden fruit' of all the English markets."

PUBLICATIONS RECEIVED.

How to Destroy Insects on Plants and Flowers in the Garden and the House, 1878, New York, Henry Williams, Publisher. This is a valuable little book of direction to window gardeners and lovers of flowers, how to overcome and destroy insects on their plants, both out-doors and in-doors. It tells how to fertilize and stimulate plants, and the experience of cultivators in keeping their plants healthy. Among the topics are these: "Red Spider," "Aphis," "Green Fly," "Worms in Pots," "Rose Slugs," "Rose Bugs," "Snails," "Caterpillars," "How to destroy insects on Garden fruit trees and vegetables," etc., etc. It is exceedingly valuable also to house-keepers, as it tells all about "Ants" and all other house bugs. Price 30 cents by mail, postpaid.

The Amateur's Handbook of Practical Information for the Workshop and the Laboratory, containing clear and full directions for bronzing, lacquering metal, staining and polishing wood, soldering, brazing, working steel, tempering tools, case-hardening, cutting and working glass, varnishing, silvering, gilding, preparing skins, waterproofing, making alloys, fusible metals, cements, glues, etc., etc. Price 10 cents, New

York, The Industrial Publication Co., 1878.

The Young Scientist, a practical journal for amateurs. Scientific Experiments, Natural Magic, Lathe Scroll saw, Microscopes, Telescopes, use of Tools, and amateurs, arts of all kinds. 50 cts. a year. Trial trip (4 mos.), 15 cts. Specimen free. Industrial Publication Office, New York. This is not a mere book of recipes clipped from old journals and encyclopædias, but a careful compiled book of instructions for performing those little technical operations which are so frequently required in every-day life, and in the workshop of the amateur. In most of these operations the recipe is but half the battle; when we come to put it in operation we are apt to fail from ignorance of some general principle, or from inattention to some important though apparently trifling detail. In the book before us this defect is avoided, and minute practical directions are given, so that any one may be able to put the recipes in practice. This is specially apparent under such headings as glass-cutting, lacquering, steel working, brazing and soldering, silvering, staining woods, waterproofing, etc.

A Treatise on Small Fruit Culture, by Charles A. Green, author of "Fruit Notes," etc., of Green's Nursery and Fruit Farm, Clifton, Monroe Co., New York, also

Wholesale Price List for Fall of 1878, and Spring of 1879, of the same locality, with transplanting directions of preparation of soil, preparing trees for planting, mulching, pruning, staking, cultivation after planting and training, summer pinching, etc.

The Livermore Valley, Cal., its resources, soil, crop statistics, capabilities, climatic influences, early history, development, attraction to settlers, opportu-

ities for men with large or small capital, etc., etc. Edited by Wm. P. Bartlett, Livermore, 1878.

WOODWARD'S GARDENS.

We, in common with all our citizens, continually visit this beautiful popular place of resort. There are always to be found in it some new and delightful attractions, and the many objects to be seen there in nature and art, in their diversity of character and beauty, are not inferior, as a whole, to the most celebrated parks of some of the oldest cities of the world. Here are the choicest trees, plants, shrubs and flowers of many varieties, and a collection of rare and fine specimens of the animal kingdom, of both the land and the water. In the grounds are sparkling fountains, dashing cascades, murmuring brooks, glassy ponds and trickling rivulets; there are mounds and hillocks, an Italian garden, grottoes and caverns, lawns, shrubberies and thickets. The Museum is full of cases of beasts, birds, fish, fossils, antique relics, peculiar animal *lusus naturæ*, mineral and geological specimens, and numerous other objects in nature. In short, the attractions at this popular resort are endless in number, among which are conservatories, fragrant with the perfumes and gorgeous with the bloom of flowers from every clime; an art gallery, geographicon, presenting rotary natural scenes in all the zones of the world, and camera obscura; and for those fond of sport there are boats, swings, trapeze bars and rings, which are free to all. The aquarium is, perhaps, more attractive than any other especial feature in these far famed gardens.

The seal ponds are full of interest to those who have not had an opportunity to study these animals in their native haunts. Some good sized ponds lately

made are full of our native, as well as Eastern brook trout. Adjoining the tanks of the aquarium there is also a fish hatching machine.

Tigers, grizzly bears, kangaroos, South American jaguars, panthers, camels, buffaloes, sacred cows, all, with many varieties of animals of less note, are among the inhabitants of the menagerie.

Finally there is the Pavilion, in which are to be witnessed a variety of pleasing performances in the arena at stated times, with feats of gymnastic skill, acrobatic performances, skating, and also dancing and burlesque plays. In connection with the Pavilion are refreshment rooms. There is also an observatory. But the objects of interest, beauty and curiosity are really almost endless, and want of space compels us here to close on a place and theme which have proved Mr. Woodward to be a great benefactor to San Francisco's population, by providing so many instructive and beautiful attractions, and the strongest evidence that his motives are beneficent is furnished in the small price that is charged for admission to his grounds.

PRUNING SHEARS, AND HOW TO USE THEM.

The rural world is yearly flooded with pruning shears of every description, each being, of course, duly patented, and the pet of some self-sacrificing inventor. There are shears for one hand, and shears for two, and shears which appear to need, for their successful operation, the use of half a dozen. There are shears which work with a sliding cut, shears which revolve, and shears which push forward upon the limb, like a chisel. There are shears of every imaginable shape and size, opened by springs of still greater variety. When

the peddler of shears goes around to the orchards in these autumn months, he is volubly explanatory, and, in his way, almost eloquent. If the owner refuses to purchase, he departs with an air of profound pity and reproach.

Among the numerous styles of shears there are some which are made of poor materials, or operate on false methods, involving a loss of time and strength, or have weak springs unequal to the task, and are a constant source of expense. A gentleman of experience said to us, speaking of a new pair of shears he had been inveigled into buying:

"They are highly finished, and at the first glance appear strong; but the finish is too ornate for out-door work, and the strength is in the wrong places. Although the blades are so heavy that a man who works steadily feels exhausted, still the points, where a strain comes, are positively weak."

Without instituting a comparison between different makes, we will give a few principles to guide the orchardist and gardener in the choice of pruning shears. The best style is that which combines strength and simplicity. In small shears the handles and blades must be at such an angle that a limb can be gripped without opening the hand inconveniently. In this respect a great many shears are defective, and the handles are too straight for rapid work. In a good pair of garden shears, when the tips of the handles are two and one-half inches apart, the tips of the blades ought to be one inch apart. The slender iron handles, so often seen on garden shears, become tiresome in the course of a day's work. Medium sized wooden handles are much better.

The orchard shears are worked with both hands, and give such a leverage that only the best of steel blades, and the toughest of hickory handles will

long endure. The *Averancator* is a knife on a long pole, worked by a cord, and used for pruning the top boughs of a tree. Shears, of whatever type, when used should be held so that the sharp blade alone is moved. They should be kept sharp and free from rust, using a little oil on the fulcrum occasionally.

ANNUALS FOR WINTER AND SPRING.

There is a sober season in most of our gardens, before the spring bulbs and early blooming shrubs are in their prime, when it needs, even in California, a little forethought to maintain a constant display. Over these few nearly blossomless weeks some of our hardier annuals, used in the East for spring blooming, will, if sown in the fall, extend their blessing of color and form. It is during these few weeks that we most need flowers in great variety. We want them in the sitting-room, parlor, and bedroom; in the office, school house, and church; at Christmas merry-making and New Year's rejoicing. How shall we best have something bright and beautiful in these few weeks? We must plant some Annuals.

The difficulties attending the growth of annuals on this coast have been much overestimated. Our native species, embracing some of the loveliest in cultivation, and all those marked hardy and half-hardy in the catalogues, succeed best with fall sowing. Some will bloom in from six to ten weeks from the seed, whilst others require a longer time. As yet our gardens have hardly known the value of annuals for a brilliant display of color and grace of form. Annuals through the rainy months need little care except weeding, and they are much better for summer blooming, also, than if sown in spring.

The annuals to be chosen for winter

blooming here must be those which delight in rain and a moist, cool atmosphere, and do not object to an occasional sharp frost. Pansies come first into our thoughts, if we are genuine flower-lovers. No other flower has such an exquisite color, appealing grace, and almost human expression. Then the pansies love our wild winters so dearly that it gives a kindred joy to plant them. Of pansy seed, buy only the best; sow in a shallow box, before the early rains; shade and water carefully; finally transplant the seedlings to the garden when about an inch high.

Beautiful in themselves as any pampered hot-house blossom are our best native annuals, much used in England and elsewhere, but here sadly neglected. Nearly every one who rambles over our foothills in early spring, knows and loves the delicate, sky-blue *Nemophila*. There are also several other varieties; one with pure white flowers; one with dark spots on a light ground, and one of a velvety brownish purple, rich and unique.

The *Nemophila* needs early sowing in the open ground, and prefers a little shade or slight northern exposure. Other early-bloomers are the *Collinsia Bicolor*, which has spikes of labiate pink and white flowers, set in whorls; the blue, white and purple *Gillias*, becoming rarer upon our hillsides every year, and the *Whitlavia* with its deep cups of intense blue and white.

The Larkspurs form a large and easily cultivated class. We have known large beds to be sown before the rains, as a farmer dry-sows his wheat, thinned out, and treated about as a bed of turnips or lettuce. The result was a gorgeous display. Dwarf annual larkspurs are showy, but not graceful, or long in bloom. The tall rocket larkspur

is rarely beautiful for vases, and blooms much longer. Best of all are some of the perennial, such as *Delphinium Chinensis* and *D. Formosum*, and these may be had in bloom through the winter.

There is also the *Anagalis*, or blue English Pimpernel, a bright flowered little creeper, which deserves notice. The flowers are saucer-shaped, very delicate, and borne on slender stems coming from the axils of the leaves. We have a native species, but the flowers are much smaller, and of no definite hue. Hybrid *Mimulus* are choice for a winter display, but their blotched and curiously mottled flowers are not worth much for decoration. Among the *Cenotheras* (or Evening Primroses) there is one species—*Acaulis Alba*—which blooms through the winter, opening several of its large silvery blossoms each evening. The tall white annual candytuft is one of the best flowers we can have for winter decoration. Pure white and rose colored ten-week stock are also valuable. Most of our other winter-blooming plants are perennials here.—*Bulletin*.

FRUIT CULTIVATION AND REPORT ON THE FRUIT AND VEGETABLE MARKET.

It is generally admitted that fruit trees do well in a warm, friable, moist and deep soil; that they succeed but indifferently on one that is cold and stiff, and that they altogether fail on one either very wet or very dry. The subsoil also has a very powerful influence on the health and prosperity of trees. If this be rock or what is called hard-pan (whatever be the surface), the trees and the fruits are much deteriorated. Nor will the remedy sometimes resorted to, of cutting off the tap-root, and leaving the tree to sub-

sist on those which are merely lateral, be sufficient. Land half covered with rocks, and incapable of being cultivated with the plough, is in some respects admirably suited to the apple tree. For in such situations, they are not liable to suffer from drought; they receive nearly a double portion of moisture from the rains that fall, and a greater degree of heat by the reflected rays of the sun.

The most desirable aspect, is unquestionably a somewhat elevated and naturally sheltered declivity, open to the south and south-east. When the violence of our western gales is broken by an intervening hill, a south-west aspect has been found equal to any.

The first thing to be determined on, in the planting of an orchard, is the proper distance of the trees. The different sorts of fruit trees will of course require different distances. We think that apple trees and some other fruits in California are generally planted too close to each other. If an altogether fruit plantation be the object, the distance may be smaller; if the cultivation of grass or roots, or anything else between be in view, the space between the trees must be wider; at thirty feet apart an acre will contain 48 trees; at thirty-five feet, 35 trees; at forty feet, 27 trees; and at fifty feet, about 18 to the acre: these are the usual distances, which may be adopted according to the character and depth of the soil. As far as can conveniently be done, trees of the smallest growth may be planted on the lightest soil; and taking every circumstance into consideration, it will probably be found that on this coast 35 feet is the most eligible distance for apple trees for a farm orchard. It will admit sufficient sun and air, in our dry and warm climate; and until the trees shall be fully grown, will admit of any

profitable application of the ground to the cultivation of many kinds of vegetation in either small fruits or other productions.

The tops of young trees should seldom be shortened, lest it should tend to produce a growth of troublesome suckers. They may be thinned, if found too heavy. If the trees have been at all out of the ground for any time, and the roots have become too dry at the time of planting, the labor of pouring a bucketful of water round each tree will be amply repaid in the success it will insure to their growth. The looser, of course, that the ground is kept for the first, and indeed for several succeeding years, the more certain and vigorous will be the growth of the orchard. In the arrangement of an orchard, both convenience and beauty will result from planting each kind of trees in distinct contiguous rows.

The prevalent winds of our climate and slope are from the west. In most soils, especially near the sea-coast here, their violence will sometimes give to newly planted trees an inclination to the east. This may be generally remedied, by setting up the trees while young, and when they have attained a large growth, it may be overcome in a great degree, by cutting off the leaning branches, and by freely pruning the leeward side of the tree. But this may be prevented in the very beginning by fixing short poles or stakes, and tying the tree to them.

The principal objects of pruning, are to procure a good pole or trunk for timber; to form a head for the protection of fruit, and to subserve the purpose of ornament.

To effect these objects with the least trouble and greatest advantages, upon non-resinous trees, the following rules may be recommended:

1. Begin to prune the tree when it is young.

2. Cut close and smooth to the pole or limb.

3. Cut, when small, the branches which are likely to interfere, or become useless, and which if suffered to remain, will require to be removed at a more advanced period of growth.

4. Do not trim to excess. Let the branches occupy *at least* a third of the entire height of the tree.

5. Do not prune when the tree bleeds. Where the preceding suggestions are observed, we may add:—Prune chiefly in the summer—but not till about June or July, when the new growth has considerably advanced.

If the operation of pruning is commenced when the tree is young, and judiciously followed up, a good knife, a small saw, and a chisel, fixed on a six foot handle, to trim the tops and extremities of the branches, are all the tools that are required. A large saw will be occasionally wanted; but an axe or hatchet should never be employed, as they fracture the wood, bruise and tear the bark, and disfigure the tree.

We have now on our coast many borers, caterpillars and coddling-worms attacking our fruit trees, especially our apples. Caterpillars may be easily destroyed, if taken in time. Early in the morning, they may be found in a small compass under their web. If within reach, the whole colony may be crushed in a moment with the hand. To reach the more elevated webs, wind the end of a pole with rags, and with this destroy them, or saturate it with soap suds, or lye made from common wood ashes. To get rid of borers, a worm which perforates the wood at the surface of the earth, examine the trees at least annually, and use coal oil or potash on the trees for their destruction,

and as a prevention before they have penetrated the tree. Apply this in the spring. The canker worm, which comes out of the ground in spring, we believe, has not yet made its appearance here. There is no pest more difficult to counteract and destroy than these nuisances.

The fruit and vegetable markets do not present much alteration since our report last month (Nov.) Liberal supplies of Strawberries at moderate prices have been coming in for more than a month past, and are still daily arriving in rather smaller quantities at this time. They are all from our own plantations and gardens. About the middle of last month we received large quantities of both green and dried fruits, Blackberries, Plums, Pears, Apples, Peaches, etc., from Oregon. And from the East, by rail, there arrived an abundance of Cranberries. Raspberries were still in market at the latter end of November. Medlars, a rather uncommon fruit here, were to be seen in small quantities, as this is about the season for them.—They are a peculiar fruit, and only fit for the table when undergoing the first process of decay or fermentation, or touched smartly by frost. According to the statement of the *Commercial Herald*, the Fall season has been exceedingly propitious for curing sun dried fruit to perfection. We are in receipt of new crop Malaga Raisins and Lemons, Smyrna Figs, Zante Currants, etc., Eastern Cranberries, Chestnuts, etc., but the abundant supply of California and Oregon dried fruits, Raisins, case goods, Honey, and green fruits generally, cause a light demand for all imports. New crop California Raisins are in good supply. 20 lb boxes of the very choicest layers, put up by the Messrs. Blower and Briggs, command \$2 25; hf bxs, \$2 50; qr bxs, \$2 75; $\frac{1}{8}$ th fancy bxs, \$3.00 to \$3.25.

CULTIVATION OF THE BLACKBERRY.

One of the reasons why we see so little fruit on Blackberry plants, is that they are not properly treated in the summer. As soon as the canes reach four feet in height, the ends should be pinched off. This induces a strong lateral growth, which should also be pinched when a foot long. Care of this kind will make compact, productive bushes.

Set the plants three or four feet apart in the row, and the rows four feet apart. For field culture the rows should be seven or eight feet apart. It is often stated that rich soil is neither requisite nor desirable for the Blackberry. But the largest crop and the largest berries we have ever seen, were raised upon land that had been heavily enriched with barn-yard manure. In any event, the soil should be deeply plowed. The plants may be set now or in the spring. We prefer fall planting for both Raspberries and Blackberries.

In Arkansas Kittatinny is best. The Kittatinny and Lawton are both cultivated in Florida with success. The Barnard is spoken of as very hard and productive in Iowa. In Kansas the Kittatinny is most reliable—the Lawton is more liable to be winter-killed. In Mississippi wild Blackberries are so abundant that the cultivated varieties are not much grown. Lawton does well. In Oregon Lawton is the favorite.

The Kittatinny is preferred in Mississippi, New York, Pennsylvania, New Jersey, Delaware, Ohio, Iowa, Nebraska. The Wilson's Early thrives in Delaware, Kentucky, Nebraska, California.

THE art of neat, rapid, and scientific pruning is not to be purchased with the first pair of shears, but must be gained slowly, by much experience. To prune a tree or shrub is not merely to reduce

its size; it is to study its nature, and follow out some definite plan from year to year; it is to preserve symmetry, and character, and beauty; it is to regard the subject as a living organism, liable to suffer from too heavy or injudicious pruning. Only a man who has yet a lingering faith in dryad and hamadryad ought ever to be turned loose in a garden with this fateful weapon.

Pruning properly begins when a tree or shrub is first planted, and may do much to modify its nature. If the limbs are cut to outside buds the tree becomes more spreading; if cut to inside buds, the tree becomes more upright. By severe cutting back trees of rambling growth are made more compact, and by thinning out in the centre close-growing trees yield better. By studying the growth of each kind, and adapting the method of pruning, a remarkable uniformity may be obtained in the orchard.

The proper time to prune is immediately after the leaves fall. In some places we notice that a bad habit of waiting till spring has come into vogue. Nothing could well be more shiftless or detrimental. The orchard ought to be pruned, the brush trimmed, and hauled away before Christmas, leaving the ground clear for the work of plow and harrow. In the vineyard late spring pruning does an injury to the vines, making them "bleed" heavily. The shrubs in the garden, which bloom on new wood, may be pruned severely in the fall, and will bloom better for it. Of this character are roses. Those shrubs, however, which bloom only on old wood need very slight fall pruning, for the blossom buds are already formed, and will be lost. Evergreens may be cut at almost any season of the year.

SOME of the apple trees up the Napa Valley are in bloom.



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LIST OF

NURSERYMEN, FLORISTS, SEEDSMEN.

Frequent application for information about the *NURSERYMEN* *FLORISTS*, AND *SEEDSMEN* in San Francisco has induced us to furnish the following list, which we will add to and correct from time to time :

NURSERYMEN.

APPLEBY, WILLIAM, south side Mission, between Nineteenth and Twentieth Streets.

BARBEE, JOHN (Laurel Hill), north side Bush, between Lyon and Baker Streets.

BROCQ, ALFRED V. (Bay View), southeast corner Twelfth Avenue and J Street.

COLLIE & STEWART, 18 Post Street.

DOYLE, LUKE, southeast corner Pine Street and Central Avenue.

GAUBERT, JOSEPH (South San Francisco Nursery), 606 California Street.

HARPER, JOHN, east side Folsom, between Nineteenth and Twentieth Streets.

IOCHNER, MAX, northeast corner Turk Street and Van Ness Avenue.

LEONARD, JAMES H., southwest corner Valencia and Quinn Streets.

LUDEMANN, FREDERICK (Pacific Nursery), Baker, between Lombard and Chestnut Streets.

MEHERIN, THOMAS, 516 Battery Street.

MEYER, E. (Eureka Nursery), 27 Geary Street.

F. A. MILLER & CO. (Exotic Gardens), south side of Mission, between Erie and Thirteenth Streets.

NEELY, DAVID, northeast corner Folsom and Twentieth Streets.

PATTERSON, WILLIAM (Golden Acre Nursery), San Bruno Road, near Twenty-ninth Street.

POUYALLET, CHARLES (California Nursery), corner of Harrison and Twentieth Streets.

ROBERTSON, WILLIAM, 2312 Folsom Street.

ROEMER, A. P., east side San Jose Road, near Six-mile House.

SCHO, CHARLES, west side San Jose Road, near West End House.

SOUTH SAN FRANCISCO NURSERY, 606 California Street.

FLORISTS.

APPLEBY, WILLIAM, south side Mission, between Nineteenth and Twentieth Streets.

ARRIVE, PIERRE, Galindo, between Guerrero and Dolores Streets.

AURIGNAC, MARCELIN, front of Lick House.

CARISTIE, RENF, corner Montgomery and Post Streets.

CAPLAN, JOSEPH, Crescent Avenue, Bernal Heights.

COLLIE & STEWART, 18 Post Street.

BLOOMER & DEASY, 736 Market Street.

DANIELS, BENJAMIN, 409 Hayes Street.

DAVIDSON, JOHN, northwest corner Sixteenth and Folsom Streets.

DENNIS, CHARLES, west side San Bruno Road, near Courtland Avenue.

DOYLE, LUKE, southeast corner Pine Street and Central Avenue.

EYRAUD, A., 121 Sutter Street.

GALLO & CO., 236 Sutter Street.

GAUBERT, MARIE, 606 California Street.

GUERIMAND, ALPHONSE, 18 Ellis Street.

KAHN & LEGENDRE, 733 Clay Street.

LANTHEAUME, JOHN P., 356 Fourth Street.

LOUADEC, PETER, 728 Washington Street.

MEHERIN, THOMAS, 516 Battery Street.

MEYER, E., 27 Geary Street.

MEYER, WILLIAM, 339 Bush Street.

F. A. MILLER & CO. (Exotic Gardens), south side of Mission, between Thirteenth and Erie Streets.

NEUBERGER, HENRY, northeast corner Fillmore and Waller Streets.

NEULENS, J. B. MME., 716 Washington Street.

POUYALLET, CHARLES, corner Harrison and Twentieth Streets.

ROBERTSON, WILLIAM, 106 California Market.

SANCHEZ, FELIX, southwest corner Fifteenth and Guerrero Streets.

SIEVERS, JNO. H., 25 Post Street.

WOLFF, BERNHARD, 28 Fourth Street.

WELSPIEL & FAHRENHOLZ, 121 Sutter Street.

SEEDSMEN.

BOWEN, EDGAR J., 804 and 808 Sansome Street.

SILVESTER, GEO. F., 317 Washington Street.

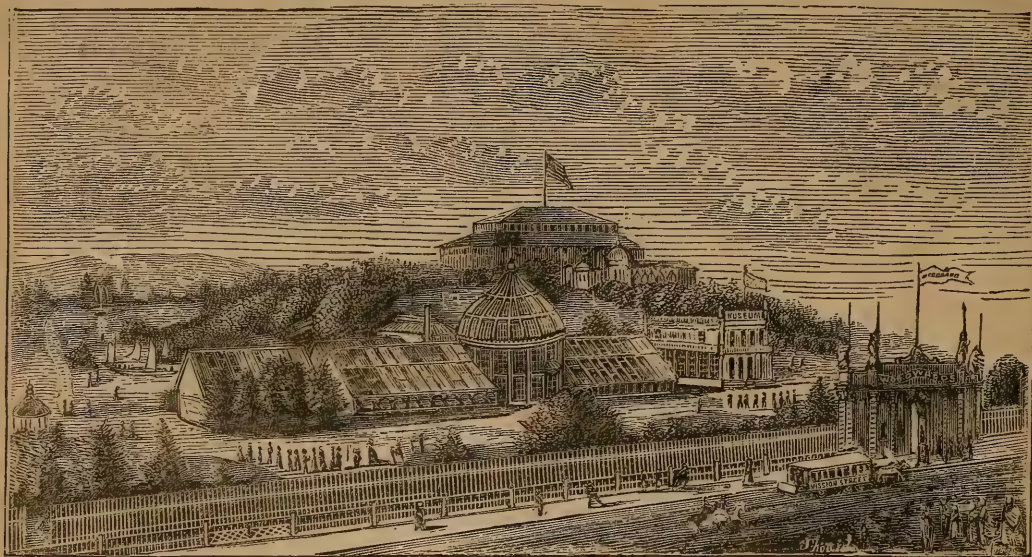
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